

MOTOR TREND

ARE THE **'57s**
REALLY NEW?

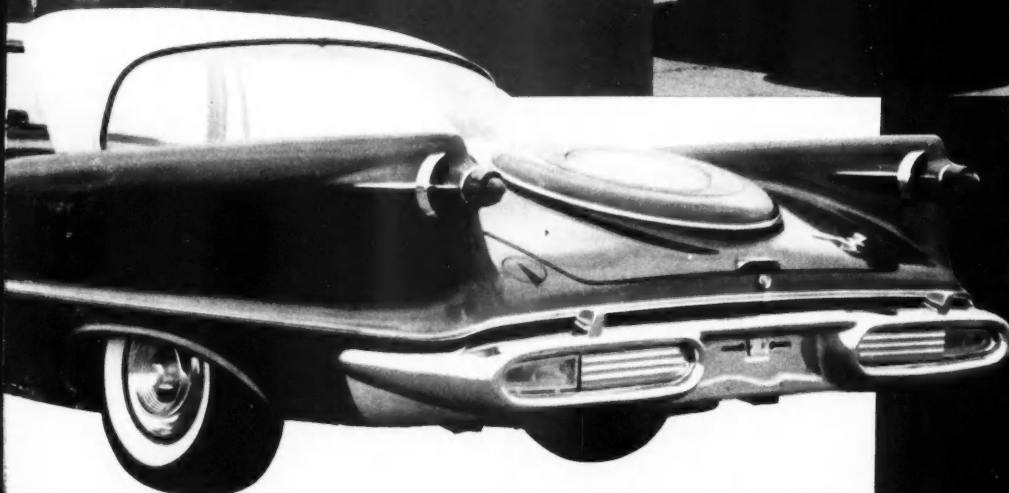
14 Driver Reports!

2 Full Tests!



'57
cars

CHEVROLET, PLYMOUTH,
BUICK, OLDSMOBILE,
PONTIAC, MERCURY,
DODGE, CADILLAC,
CHRYSLER, DE SOTO,
STUDEBAKER, RAMBLER V8,



NASH, HUDSON,
IMPERIAL,
CONTINENTAL,
THUNDERBIRD

SPECIAL
SECTION
PAGE 16

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DECEMBER

1956

PUBLISHED MONTHLY

VOL. 8 NO. 12

SPECIAL THIS ISSUE . . .



'57 RAMBLER with new V8 engine should now appeal to power-conscious buyers. Complete test, page 43.



SPEED LOVERS will find little wanting in the performance of the fuel-injected Corvette. Page 52.



UNVEILING OF ROVER T-3 proves that gas turbine cars are almost here. Details on page 62.

THE COVER: The Chrysler Corp. sisters, who only recently blossomed out of the "awkward stage," no longer have to take a back seat to anyone where beauty is concerned. In the top photo, the '57 De Soto shows off her chic lines. Below, the new Plymouth lets you take a peek at her stylish front, while the stately Imperial is proud of her new rear end.

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next month

THE JANUARY MOTOR TREND will be a special, extra-paged '57 show issue, devoted to all the new American cars. Those who are interested in the '57 models will be able to compare them all—all the way from specifications to accessories. In addition, for the first time, MT brings you complete road tests of the Chevrolet, Ford and Plymouth V8s—all in the same issue. Watch for the BIG January MOTOR TREND.

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MEMO

The accurate interpretation of
complex material for the layman
has always been our aim.

from the editor

THERE'S NOTHING REALLY NEW.

A startling statement perhaps, but it's one you've heard before and undoubtedly will again. There *is* nothing really new—about cars, people's behavior, or whatever else you care to name.

What *is* new is our approach to such things, or a new generation viewing "changes" in a different light.

This issue is devoted largely to Detroit's '57 products. Faced with the disadvantage of being a monthly publication, we are unable to reach you with news about these new cars at the same time your daily newspapers, radio, and TV commercials will be flooding you with them. We have to take into consideration the fact that by now you will have seen photos of the new cars, and that many of you will have seen them in the flesh (or metal) at your dealers' showrooms.

What we must attempt to do, therefore, is to show you what's underneath, what's new from technical and engineering standpoints, and what it's like to ride in the new cars. So if it seems that we are a bit skimpy in our descriptions of newly styled bodies, or that we don't show you all the models built by each manufacturer, you'll know the reason why. After all, what's on the surface is easy to see; what's beneath takes a bit of peering.

①

IN LINE WITH THE THINGS that are new is a probable round of price increases. Estimates of new price boosts on the low-priced three take them up as high as another \$100. Maybe this can be absorbed by the buyer, and maybe not. We feel pretty much the way the National Automotive Dealers Assn. feels, to wit, that the manufacturers must absorb the increased cost of materials and higher wages, or "face a buyer's strike."

We all know that money is tighter in this pre-election era than it has been for several years. When the fact that loans are becoming harder to get is coupled with the fact that buyers resisted new cars in '56 (whether because of price or style makes little difference in this argument), the manufacturers should give pause before increasing prices of the '57s. We would venture the thought that more midnight oil is being burned on this one facet alone than all the others of production, previews, getting cars into the hands of dealers, etc., combined. That prices will go up ultimately is almost a certainty. We hope that with it will come cars that are better engineered and better built.

②

PRESSTIME FOUND OUR OFFICES bulging with envelopes containing Win-A-Car Contest entries. Since we went to press with this issue just two days after the contest deadline, we have not been able to *open* all the envelopes, much less *judge* them. It's going to take a while to match up the two parts of each entry, to compare the drawings to the new Chrysler products, and to judge the worth and sincerity of those letters describing what each entrant would like to see in the '57 cars. We'll publish the results just as soon as we can. If YOU are the winner, you'll hear before anyone else, of course.

Phil Thompson



Only 4½ feet high...and all **DYNAMITE!**

You've heard of the Dodge D-500. The '56 version whipped all cars in acceleration at Daytona Beach, and racked up a string of victories on dragstrips all over the country.

And for 1957, Dodge introduces a D-500 that's *all new from road to roof*—slicker looking, better handling, more powerful and responsive.

Barely 4½ feet high, this low-slung beauty has no equal in the way it corners, handles and rides. It features a brawny new 325 cu. in. mill, new 3-speed TorqueFlite, new Torsion-Aire Ride (with race car torsion bar suspension) and new Total-Contact Brakes.

And this baby can really move! Tromp on the accelerator and you're off like a runaway jet. Spin around a corner and there's not a squeal. Hit the binders and you come to a straight-line, heads-up stop—pronto!

Sound like an expensive custom job? It's not! This D-500 is a *regular production model available in all body styles*. And you have a full selection of extra-performance options that are available "cafeteria style": dual quads, special cams, high compression heads—the works!

The new Swept-Wing Dodge D-500 is just itching for action at your nearby Dodge dealer's. Drive it today!

SWEPT-WING '57 Dodge



Now on Display at Your Dodge Dealer's!

(Advertisement)

McCulloch Supercharger



>> Tips

by
John Thompson

As this column goes to press, I'm on an extended tour of the U.S. in the McCulloch supercharged T-Bird which has carried off so many trophies in the drags. Even though we changed the differential gears to 3.31 for the road, it is still quite a going machine!

One of the most exciting days I've spent in a long while took place at the National Hot Rod Association drags in Kansas City, Mo., where McCulloch supercharged cars put on a real show.

In the A/Gas class final eliminations, for example, "Farmer" Jones of Texas and Wilton Zaiser of Maryland waged a spirited duel, with Zaiser coming out the winner by a nose. He was piloting a Model A Ford with a McCulloch supercharged Oldsmobile engine. Jones, who gave Zaiser a terrific battle, was behind the wheel of a coupe powered by a McCulloch supercharged Buick.

Most of the 1957 cars have already been unveiled to an admiring public. First reports out of Detroit predict that sales of the longer, lower, more powerful machines will zoom to new highs. To meet the demand of these higher output cars, we've been hard at work the last few months developing a new method for making the high speed shaft which will greatly increase the ultimate capacity of the 1957 McCulloch supercharger. Look for this new unit to make a world of difference in the performance of '57 cars!

Add the name of Bob Osiecki, that well known Southern gentleman, to the growing list of McCulloch distributors. Bob, who runs the popular Osiecki Racing Equipment firm at 1015 Seigle Ave., Charlotte, N.C., will handle distribution of McCulloch superchargers in both North and South Carolina. *The Southern California area has really been buzzing lately, what with hotly contested drag races exciting the speed aficionados at Santa Ana and Long Beach. McCulloch supercharged cars have done right well in these meets . . . for example, Al Hibrian of Los Angeles carted home two trophies in his stock T-Bird with a 101.31 mph clocking at Long Beach. Al's car is a Fordomatic, with three carburetors.*

At Santa Ana, a Swedish Volvo with Mel Hammer at the wheel, turned better than 74 mph to take first place in its class. Another T-Bird, this one chauffeured by hometown Pete Peters, ran away from the field with a sharp 109.5 mph mark at Santa Ana. Pretty impressive speeds, I'd say!

If you'd like to boost your car's horsepower up to 40%, greatly increase acceleration between 0-60 mph, and add between 5 to 20 mph to your top speed with no loss in smoothness or reliability, a McCulloch supercharger is the answer. Just write to me, John Thompson, Paxton Products Division, McCulloch Motors Corp., 827 W. Olive St., Inglewood, Calif., and I'll send you full details including price, the name and address of your nearest dealer and an illustrated folder. Please specify the make and year of your car, carburetor type and power equipment, if any.

LETTERS

OPEN LETTERS TO THE MANUFACTURERS

Dear Sirs:

Road racing on the Continent and throughout the world attests to the excellent design of the Ferrari, Maserati, Jaguar, Porsche and Osca.

The most important structural feature of these cars (insofar as their remarkable roadability is concerned) is the wheels which are made as large as the fenderline will permit. In some cases this fenderline is the highest point of the machine's silhouette.

This large wheel that permits a maximum underslung for a given road clearance not only improves cornering and stability over uneven surfaces but also gives longer tire and brake lining life and superior brake efficiency.

In the face of these simple facts, we learn that a smaller wheel is the revolutionary improvement to be featured on some of the new '57 cars.

Clearly the time has come for the automotive engineers to put up the stop light in front of these impractical stylists before they raise the center of gravity up near the roofline by putting their already unsafe 100-mile-an-hour-plus juggernauts on roller skate wheels.

G. H. Lehmann Bethesda, Md.

Gentlemen:

My family and I just returned from a 6000-mile trip through the western U. S. in my '55 Ford Six with overdrive. Whenever road conditions permitted, I drove 70 to 75 (speedometer reading) and across Nevada up to 90. I kept track of all gasoline used and the mileage checks out to 21.16 mpg. This car carried two adults and three children and a trunk so

full of camping equipment, it nearly bulged. I have concluded that the people with the higher-powered cars are not using the power they have.

The Ford Six sells for \$103 less than the Eight, so you might say we got a free trip for owning the Six as our gas totaled \$98.37. Even with such performance available at reduced prices, the sixes keep getting scarcer. I have come to the conclusion that the American public likes to be "took."

Z. L. Altenburg Kings, Ill.

Gentlemen:

At the Canadian National Exhibition I had opportunity to inspect all American and Canadian cars. I am surprised and disgusted at the extremely low quality built into those machines. I own a Volkswagen and although it is much too small a car for our growing family, I am delighted with its high standard of quality and workmanship. I will soon be forced to acquire another car. It will be a—Volkswagen.

Jack Bode Toronto, Ont.

Gentlemen:

Just a note of rebuttal to the recent flood of correspondence about the poor quality and engineering of the late model cars. I am a salesman and, in the course of business, drive about 50,000 miles per year. My 1954 Ford 8 with overdrive now has about 93,000 miles registered on the odometer. I have only two basic, but inviolate, rules of maintenance: 1) proper warmup period; and 2) proper lubrication care.

Jack McCann Montgomery, Ala.

DRIVING IS GETTING SAFER

Gentlemen:

You've read plenty of articles about the danger, death and destruction spread broadcast over our highways. Surely, an annual death rate nearing 40,000 is nothing to be proud of, but some encouraging statistics are lost in the threatening approach that safety officials have chosen to use in managing the accident problem.

The key to our collective behavior behind the wheel is not to be found in the total deaths per year at all, but in the death rate. The statistician must probe behind the tall red figures and consider the number of deaths per so many traveled miles per year.

In 1925—a year when the parents of many of us formed the majority of U. S.

drivers—18 persons met death on the highway for every 100-million vehicle miles. By 1954, the death rate on our highways had actually dropped by 64 per cent!

This startling reduction can be partially attributed to better roads, though we have far more traffic on them than in 1925. Better cars have cut the fatality rate and part of the reduction can be credited to better medical facilities and to better drivers.

Had the death rate not dropped from its 1925 level, more than 100,000 persons would have been killed on our streets and highways last year. But they weren't. No matter how luridly highway deaths are tabulated and reported, the fact remains that percentage-wise our highways are less hazardous

MOTOR

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to life today than during the era of the rumbleseat and running board. If the death rate continues to drop as it has through the past three decades, America's drivers will deserve more credit than anyone has dared give them.

William F. Hallstead

Lutherville, Md.

CROSLY FOREVER

Gentlemen:

First of all I want it understood that I love the Volkswagen, but I believe the Crosley is the most misunderstood car in the history of the automobile. Although I no longer own a Crosley, I'll never again sneer at the man who does. I think they deserve a little credit for trying and pioneering a good many features.

Drive one for a while and maybe the Crosley Cobra will strike again. Besides, the four-cylinder Crosley mill, ounce for ounce, packs a wallop.

Dwight Dollinger

Hillsboro, Ohio

TO EACH HIS OWN

Gentlemen:

We of the car buying public buy American cars for several reasons. They do what we want on our highways. They are roomy so that baggage can be carried. They have power to spare that is usable in the "pinches."

In my case, my pleasure is trailering. The '54 Super Oldsmobile Holiday pulls 7000 pounds of trailer over the road with no strain. Four to seven per cent grades are no problem. There are no cornering problems. There are few overseas cars (if any) that can equal this performance.

So, you can see that while overseas cars are nice toys for some people, the grass-root American likes his own product. A survey would show that I am fairly accurate in my opinion.

Reese Nelson

Park Ridge, Ill.

SMOOTH

Dear Sirs:

This is my original design of a car with a foreign look. It could be powered by a gas-turbine engine. I'm a soldier in Korea and I spend much of my off-duty time drawing cars like this.

Melvin Stevens

Buena Park, Calif.



SHOCKING INNOVATION

Gentlemen:

Quoting from an article that I took from the October 3 issue of the Santa Fe *New Mexican*, "...All models have independent ball joint front suspension, longitudinal semi-electrical rear springs, 12-volt ignition..."

I want to point out that this is one time that the Detroit boys are up on the designers from Europe. We've never seen anything like semi-electrical springs from "over there." And what's more, if they pick up this idea next year, we still can go to "full-electrical" springs in 1959.

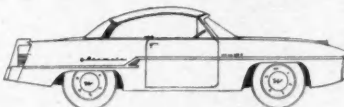
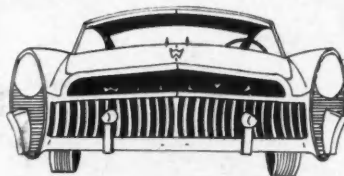
Jim Glass

Los Alamos, N. M.

A '58 WILLYS?

Gentlemen:

My drawings are for a revived Willys passenger car. The lower part of the grille is similar to the '55 and is extended to meet the fenders. The grille is made up of concave bars. The fenders themselves are new, and extend a bit beyond the grille. They



are terminated by housings, in which are placed the headlights, and "bombs" containing parking lights.

The car uses the same body, with new grille, front and rear fenders, headlights, tail lights and panoramic windshield.

Jeffrey Godshall

Aliquippa, Pa.

AN EXCEPTION AND NOT THE RULE

Dear Sirs:

I resent the hints ("Tune-up Trap," Sept. MT) that nearly all garages that are not filling stations or dealerships are dishonest about tune-ups. I have customers every day who come in with so-called factory-tuned cars that run like some of the parts have been left out. Now I know the author is right about some, but it makes all good independents look dishonest and crazy.

Don Allison

Garland, Tex.

—We're sorry we offended you. We do mean to offend the "dishonest" garage mechanics of which, fortunately, there are few.—Editor

WHERE'S WILLYS?

Dear Sir:

Why, oh why, do you not print a road test, driving impression or even a picture of the two-wheel drive Willys Jeep Station Wagon? In fact, any Willys product? True, the company now classifies the wagon as a utility vehicle, but it can be run on standard car plates. Is it because this sensibly designed, practical machine does not have phenomenal horsepower, acceleration, and top speed? Is the lack of all power-operated "junk" a reason? I own a 1953 wagon and it certainly satisfies me in every respect. Please, can't you print something about this useful vehicle?

Jay T. Herbein

Pottsville, Pa.

See the "Station Wagon Roundup" (Sept. '55 MT), and an early issue for another Willys story.—Editor

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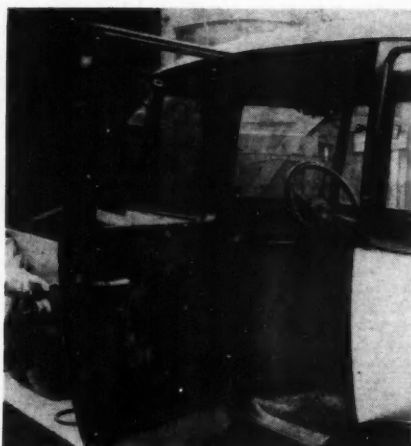
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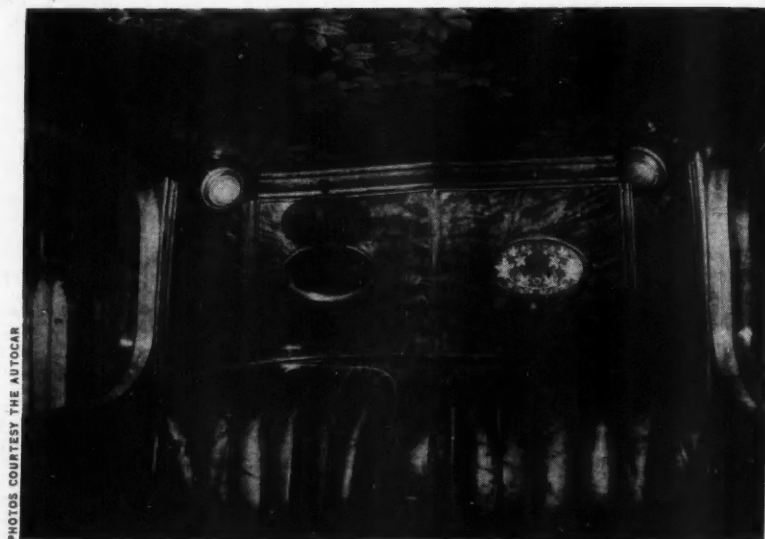
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SALOON WITH SHRUBBERY



THIS IMPROBABLE CONVEYANCE is 38 years old and can show modern cars a thing or two. A 1919 Lanchester Forty, its oddly arched roof, curved side windows and wrap-around corner "windshields" set it apart from the usual automobile of its day. A three-speed epicyclic gearbox with right-hand shift — the car is British and has right-hand drive — was one of its few claims to mechanical fame. But then as now, an inspired interior would sell cars. Wherever you plan to sit, you enter through a rear door whose walnut panels are painstakingly inlaid. You then make your way to one of the front seats by means of an aisle between them, or settle in one of the regal black leather individual armchairs at the rear. Hinged flaps, also decorated with marquetry, keep prying eyes away.



PHOTOS COURTESY THE AUTOCAR

SPORTS CAR ACCESSORIES



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for
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MG
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AUSTIN-
HEALY
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T-BIRD TONNEAU COVERS—1955-56

Custom made of top quality, 3-ply fabrics. Zippered down the center so you may drive with half the cockpit covered. Simple to install, really good looking, and will pay for itself many times in protecting the interior of your car. Comes complete with all fittings.

Choice of color:

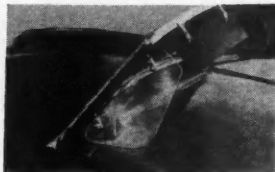
White\$44.95
Tan or black.....\$39.95

TONNEAUS FOR • MG • AUSTIN-HEALEY • JAGUAR • MERCEDES-BENZ •

PART NO.	LIST PRICE
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2012 M.G.—TD, all models.....Black	31.95
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2021 M.G.—TF, TF 1500.....Tan	31.95
2022 M.G.—TF, TF 1500.....Black	31.95
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2031 Austin-Healey 100.....Tan	39.95
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2062 M.G.—Series MGA.....Black—3 ply canvas	31.95
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2062-P M.G.—Series MGA.....Black—Plastic	19.95
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2071 Ford Thunderbird 1955.....Tan	39.95
2072 Ford Thunderbird 1955.....Black	39.95
2073 Ford Thunderbird 1955.....White	44.95
2081 Mercedes-Benz.....Tan	49.95
2082 Mercedes-Benz.....Black	49.95
2083 Mercedes-Benz.....White	49.95

NOTE: "Most M.G.—TC, TD and TF models have been fitted previously with Tonneau Covers. When ordering replacement Tonneau Covers for these cars we recommend specifying "No Snaps." Tonneau Covers will then be furnished without the snap fasteners in the front flaps. This allows the customer to fit the Tonneau Cover to the existing studs, regardless of the previous make of Tonneau Cover, placing the front snap fasteners in the Tonneau Cover at the time of installation. A small punch can be furnished to the installing dealer for approximately \$2.00. Just specify "N/S"—NO SNAPS—after the part number.



WIND WINGS & SUN VISORS

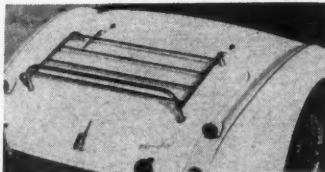
These are sturdy. Fittings are of solid brass-machined. Thick plastic wings will not interfere with side curtains or top and may be attached without drilling holes.

PART NO.	LIST PRICE
5003 Austin-Healey "100".....	\$19.95
5005 Jaguar XK120, 140.....	19.95
5001 M.G., Models TD, TF, TF-1500	16.95
5002 M.G., New Model "MGA".....	16.95
5006 Nash Metropolitan.....	19.95
5004 Triumph TR2, TR3.....	19.95
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5008 Mercedes-Benz 190-SL.....	19.95

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These are made of polarized plastic. The fittings are of machined solid brass; triple chrome plated. Attachment is simple. No holes to drill.

PART NO.	LIST PRICE
5102 Thunderbird, Pair.....	\$17.95
5100 M.G., Models TC, TD, TF, Ea.	6.95
5103 For new Model "MGA", Each..	6.95
5104 For Triumph TR2, TR3, Each...	6.95



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PART NO. LIST PRICE

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5302 M.G. Models TF, TF-1500.....	39.95
5303 New Model "MGA".....	39.95
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SPOTLIGHT ON DETROIT



BY DON MacDONALD

AS THE 1956 CALENDAR YEAR draws to a close most of the nation's attention is drawn to the 1957 new car introductions and away from the "poor-selling" '56 cars. In retrospect, though, it's interesting to note that 1956 sales weren't as bad as some pessimists would have us believe. With some of the figures as yet incomplete, it appears that 1956 will wind up to be the third best year of all time. *Ward's Automotive Reports* tells us that total production to date is 6,286,376 cars. Only the years 1950 and 1955 saw higher figures.

POSITION	MAKE	PRODUCTION
1	Chevrolet	1,617,397
2	Ford	1,453,102
3	Buick	572,024
4	Plymouth	521,000
5	Oldsmobile	484,047
6	Pontiac	401,000
7	Mercury	327,943
8	Dodge	241,000
9	Cadillac	154,631
10	Chrysler	131,000
11	DeSoto	112,000
12	Studebaker	76,545
13	Rambler	66,573
14	Lincoln	50,323
15	Packard	29,226
16	Nash	22,263
17	Thunderbird	15,631
18	Hudson	10,671

Grand Total 6,286,376
—Courtesy Ward's Automotive Reports

AS ADVERTISED, Chevrolet topped the production ladder with 1,617,397. Total production for General Motors stands at 3,229,099; for Ford Motor Co. at 1,846,999; for Chrysler Corp. at 1,005,000; for Studebaker-Packard at 105,771, and for American Motors at 99,507. Individual figures are shown in the accompanying table.

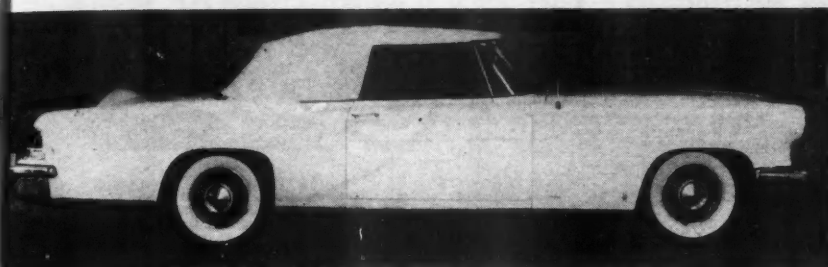
THE T-BIRD for the new year has undergone quite extensive styling changes, the main ones being removal of the controversial Continental spare, addition of fins emulating the parent Ford's cant, a clever adaptation of the Ford instrument panel (though still including a tachometer), and lowering (by one-half inch). Five engine options are available, ranging from a 212-hp (292-cubic-inch) V8 used only with three-speed transmission, to a 285-hp (312-cubic-inch) racing package used with any transmission.

THE USUAL PECULIAR OPTION arrangement on tops is continued; e.g., a plastic hardtop with ports is standard, a canvas top is extra with or without the hardtop. The convertible one is still not powered, but Ford officials claim operation has been made 100 per cent easier.

REDESIGNED SEATS ease the strain on long trips, and a Dial-O-Matic power control similar to Mercury's (see page 39) is optional. An interesting new radio automatically increases volume as the car speed increases.



Fore and aft views of the '57 Ford Thunderbird.



The new '57 Continental "Cabriolet Convertible."

AS BEFITS A MODERN CLASSIC, the Continental hardtop is continued for 1957, fundamentally unchanged. The only visible new styling feature is the addition of bumper guards in the front and the moving of the fresh air inlet for air conditioning from the leading edge of the rear fenders to a duct in the engine compartment.

FOR SALE IN LIMITED QUANTITIES (and presumably at the same \$10,000 price tag) is the new "Cabriolet Convertible." A true convertible, in appearance it emulates the late '48 Lincoln Continental Cabriolet.

THOSE WHO CAN AFFORD IT order their Continental through normal dealer channels. The car is finished from the belt line down by the Continental Division and is then shipped to the Derham Custom Body Co. in Rosemont, Pa. There, the white orlon top and actuating linkage are installed.

CHANGES FROM THE HARDTOP to accommodate the top include body widening at the pillars, new windows with a slope to match the new top line and removal of rear seat armrests (center and side). Height remains the same 57 inches.

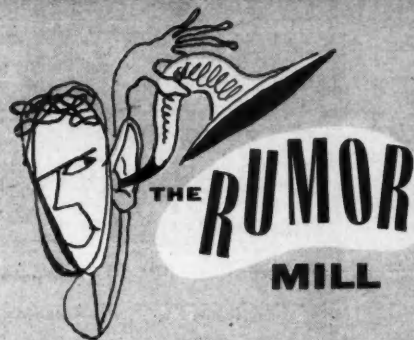
NOT TO BE SCOOPED by anything as necessarily complicated as fuel injection,

Ford introduced its long-suspected retractable hardtop. No photos have been released, but from observation of its mechanical operation we learned enough to give you an artist's conception of what the car will be like when made available to the public late in January 1957.

FIRST STEP TO LOWER the top is to push the operating button, and from then on everything is automatic. The turtle deck opens and about eight inches of the forward end folds back 180 degrees. The whole top then rises directly upwards about nine inches, moves back and down until it rests in the trunk compartment, at which time the turtle deck settles back into place.

THE PROTOTYPE SHOWN at the national press preview had a break in the front of the top to reduce the overall length when it settled in the trunk, but we understand unofficially that this won't be necessary in production models. The whole procedure takes about 45 seconds.

WHY NOT ON THE CONTINENTAL? The reason, of course, is that a retractable hardtop would be hopelessly expensive if produced in Continental's small volume. Best guess on Ford's price is about a \$650 markup from a regular hardtop.



"The forthcoming Mercury Turnpike Cruiser will have a radar-controlled braking system."

FALSE—No such feature is contemplated. Main differences from standard models (shown on page 37) will be a power-operated rear window, combined with a truly adequate ventilating system, and an instrument panel able to compute time-rate-distance problems."

"The 1957 Packard, to be announced the first week of January, will drop its much-touted torsion bar suspension."

TRUE—No attempt is being made to engineer "torsion-level ride" to fit the new chassis. Instead, Packard will rely on supercharging to keep its nameplate in the forefront of the traffic light race.

"The production version of GMC's front-wheel drive L'Universelle will be introduced this December at the New York Auto Show."

FALSE—Work on this project has been temporarily postponed for reasons that are more economic than mechanical.

"General Motors will substitute a traveling version of Powerama for its now defunct Motorama show."

VERY POSSIBLE: They are seriously considering chartering from the Maritime Commission a large freighter to convert into a floating Powerama, and thus present the latest in American progress to any place in the world that will float a ship. **"An experimental atomic-powered car is closer to a reality than ever."**

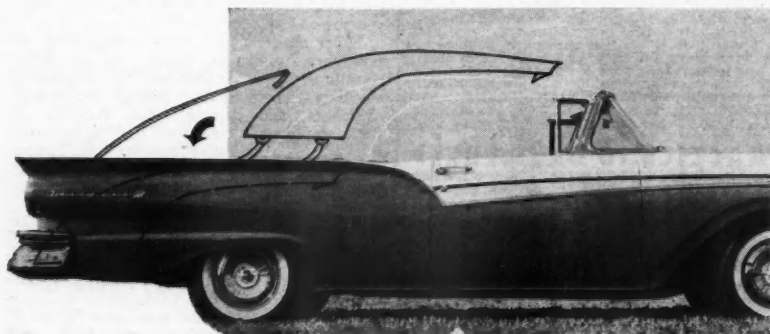
TRUE: General Motors is working frantically to get an experimental atomic-powered vehicle ready in time for their 50th Anniversary celebration. In any case, they will then announce the research project.

"Detroit is going all-out on pickups."

TRUE—Dodge Truck Division is all geared up over stimulated sales, particularly on the West Coast, ever since one of their V8 pickups has been cleaning house at drag meets. Ford plans a sleek job cobbled from the passenger car chassis and body for introduction later this year.

"Both Chevrolet and Plymouth are working furiously to get a retractable hardtop perfected so that their introduction can coincide with the forthcoming Ford splash by the end of January."

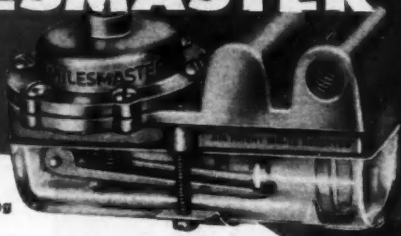
TRUE—Ford caught the industry by surprise, although everybody had been experimenting with the idea. Perhaps Ford is working just as furiously on fuel injection and torsion bars.



Artist's conception of Ford's retractable hardtop.

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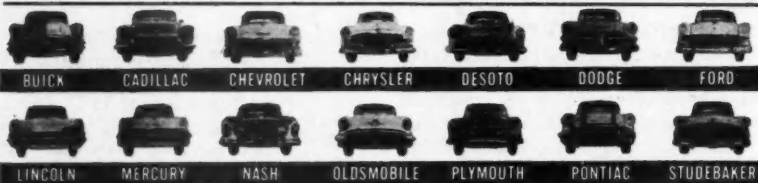
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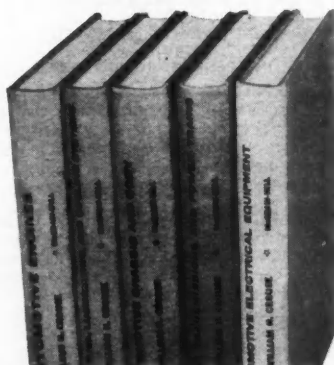
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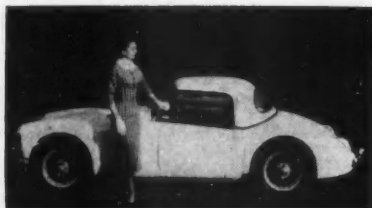
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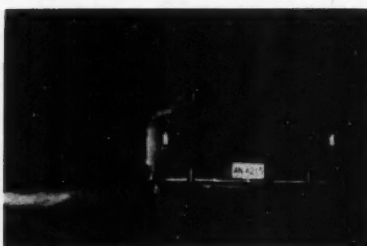
THE JAPANESE SCENE

PRICE REDUCTIONS are becoming a real novelty in this day and age, and yet the Japanese automobile industry has seen a 10 per cent slash in retail prices in recent months. Three companies—Nissan Motor, Hino Diesel Industry, and Toyota Motor—have announced cuts of nearly \$200, which is believed to be indicative of a coming major shakeup of the Japanese car industry.

Another indication is the report that the Tokyo Electric Railway Co. will form a new organization, the Japan Automobile Industry Co., capitalized at \$140 million to produce a small economy car suited to local conditions. This would probably be accomplished by merging two affiliates: Nippon Naimenki Seizo and Ohta Auto Industry. Although none of these developments will noticeably influence the U.S. situation, it pleases us greatly to note that *somewhere* in the world, prices are going down.

BRILLIANT IDEA

FIVE STATES now use reflectorized license plates, and a sixth (South Dakota) will be added in '57. Residents of these states are partaking of several important benefits arising from the fact that their license plate shines



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Ordinary plates can be seen from about 400 feet away, on a clear night, but reflectorized plates can be seen from a distance of almost 1500 feet! If your tail lights should go out, one of these plates could very easily save you from being hit by an overtaking car. Also, aside from the safety angle, the plates can be made in a variety of attractive colors, consistent with conventional light meanings. (i.e., a green plate might be confusing.)

Addition of reflective sheeting to license plates adds 55¢ or 60¢ to the manufacturers cost, but it also greatly extends the life of the plate. Maine, for example, makes its plates valid for five years. Compensation for the additional cost can be made by reducing overall costs over an extended period, by passing the increase on to the purchaser, or by elimination of the obsolete front plate which is still retained by some of the less progressive states. It is our hope that reflectorized license plates are made standard throughout the nation, as soon as possible.

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themselves or their families. Correspondence schools have become an important and respected institution, frequently through the use of highly advanced teaching procedures which permit serious students to learn more in a shorter time than they could in the big university "Fact Factories."

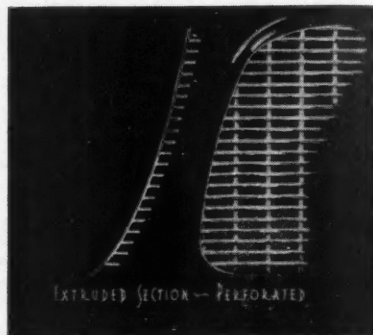
Yearly enrollments in correspondence schools outnumber those of all college and university freshman classes in the nation. As an aid to these home students, the 30-year-old National Home Study Council has formed an Accrediting Commission to investigate correspondence schools and accredit those schools which meet a rigid set of qualifications. A published list of reliable schools offering a wide variety of subjects permits prospective students to avoid fly-by-night operators. It is suggested that you look at this list of accredited schools before signing up for a course. Your local library or high school should have one, or you can obtain a copy by writing to the National Home Study Council, 1420 New York Ave., N.W., Washington 5, D.C.

FROM INDEPENDENT TO BIG THREE

JAMES J. NANCE, ex-chief of Studebaker-Packard, has become vice-president in charge of marketing for Ford Motor Co. We imagine he rests somewhat easier these nights than in his previous job.

CAR VS. PLANE

THE ROYAL AERO CLUB'S challenge to the British Automobile Racing Club, reported in this column last month, turned out to be hasty. Its protagonist, an Auster J-4 with Cirrus Minor engine, averaged 22.3 miles per Imperial gallon while the Triumph TR-3—soon to be announced with disc brakes standard—won the 50 pounds with 43 mpg.



WHAT HO ALUMINUM?

TRIM, GRILLES, and other metallic decorations of aluminum will appear on many '57 cars, and probably all '58 models. The reasons are manifold, but foremost is cost reduction. Instead of intricate stamping, piercing or molding operations requiring large, expensive dies, aluminum trim can be quickly and cheaply produced by extrusion methods which are particularly suited to complicated shapes.

Lifetime protection against corrosion can be insured by anodizing processes, which also permit coloring the piece in shades running the whole gamut of the spectrum, or simulating a gold or sterling silver finish. Detroit stylists should go out of their minds.



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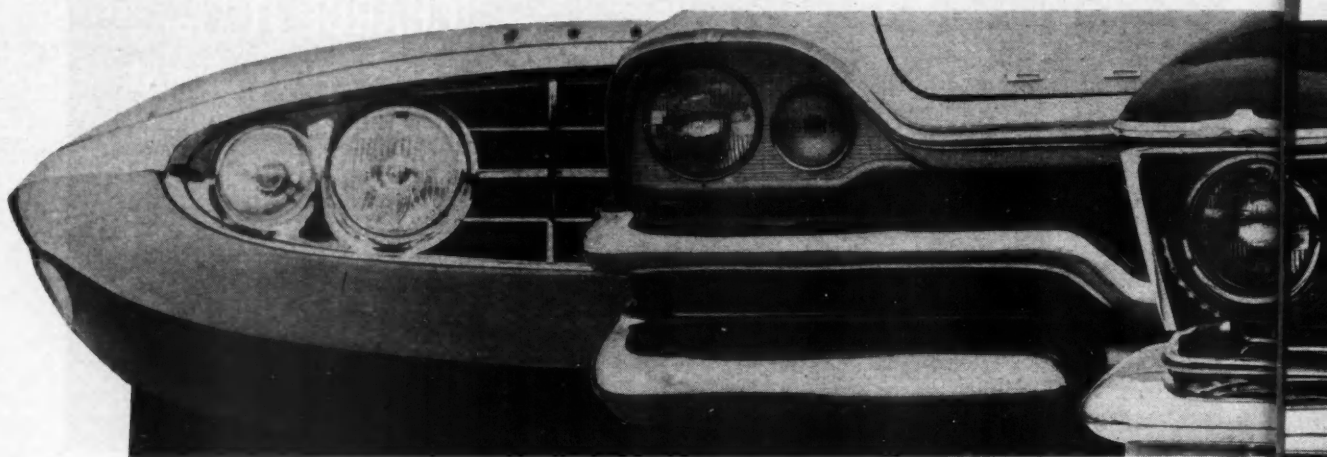
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Bank _____		Branch _____	
Charge accounts at _____		Regular <input type="checkbox"/> Special <input type="checkbox"/> Savings <input type="checkbox"/>	
Have you applied previously? _____ if addition to existing account, show number _____			
CHECK ONE ONLY ◆			
COMPANY ACCOUNT <input type="checkbox"/>		PERSONAL ACCOUNT <input type="checkbox"/>	
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10-LA-MT-3

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In its greatest gamble, Chrysler breaks two old rules: Don't make a major

SPOKESMEN FOR CHRYSLER make much of the theory that the Corporation's new cars are but the logical evolution of the '55 and '56 models. That sounds good, but we suggest that this company that started to move two years ago has now realized that it is highly desirable to Go! Go! Go!

However the new Plymouth, Dodge, DeSoto, Chrysler and Imperial came about, there is little doubt that they represent the most exciting *complete line* of cars to appear for some time. The most obvious change is, of course, in their appearance. The new look represents a change quite as complete as that in 1955, and it seems a lot more dramatic, especially by comparison with the tame changes made by some for '57.

A few of these style changes are pictured here, others on the following pages which cover individually the five Chrysler makes. Some are of questionable practicality.

But underneath the glitter is the real story, at least for MOTOR TREND readers. In large part, it's a story of compromises—extraordinarily successful in some cases—between fun and solid satisfaction in ownership. As always with this company's products, one set of engineering theories extends across the line. This year that's truer than ever before, for the very good reason that all the cars except the Imperial use the same body shells and are close to the same size.

Each car uses an impressive combination of longitudinal torsion bars in front (to replace the conventional coils) and curiously contoured outboard leaf springs at the rear. The advantages of torsion bars are many: space saving, permitting lower hoods; more economic use of metal; nearly infinite wrench adjustment of car height as senility sets in; and most pleasing, the cars' new ability to round a corner without as much teetering.

For those who lament the fact that Chrysler did not switch to torsion bars at the rear, we suggest a drive. The new rear springs look like something seen in a funhouse mirror: the front section is short and thick, the rear slim and extended. The outrigger mounting is intended to cut down on roll, the thin section continues the traditional soft ride, and the stubby portion (about seven times as rigid) keeps the willowy part in hand. Our brief tryout at the Chrysler Proving Ground couldn't give us enough experience to say whether our concern over rear end whip was

justified. Rear end dip in acceleration and the corresponding rise in braking are sharply cut.

Ball joints play a big part in better control, as they do in most every '57 car. The cars have, in fact, a broader base, since the pivots are farther apart than the previous kingpin bearings were, and they can deal better with lateral forces.

The upper control arm of the front suspension tilts backward 17 degrees, diverting part of the forces that cause front end dip in braking and actually using them to push the front end up when you stop.

The function of the lower control arm strut, in case you're wondering, is to permit controlled *backward* movement of the front wheels up to a sixteenth of an inch. This is desirable when a tire strikes a sudden or sharp obstruction, to prevent shock from whacking the passengers.

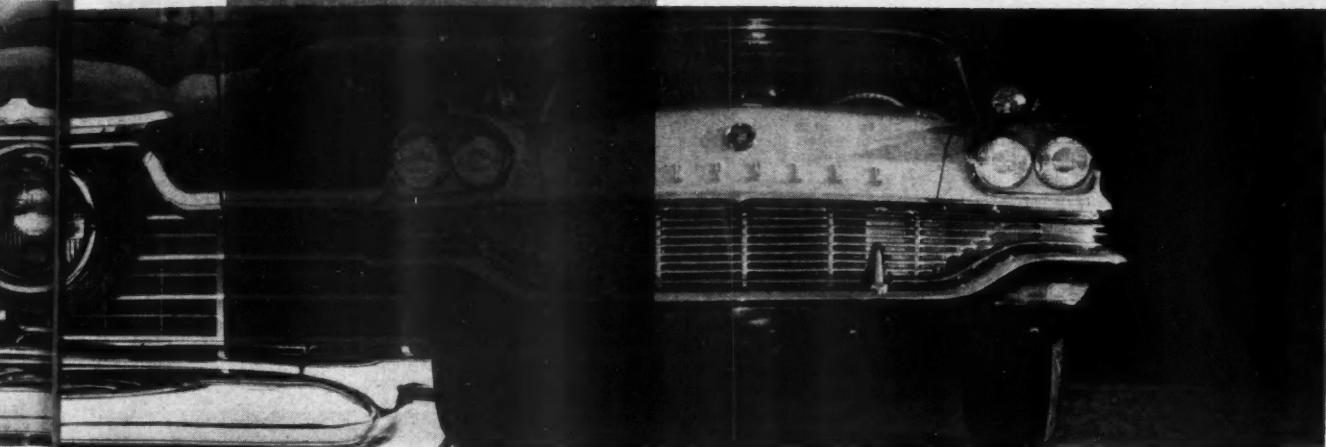
Rubber insulation is complete throughout the suspension system, and should reduce driver and passenger fatigue by elimination not only of those continual obvious small shocks but also of some that we may not have been conscious of, but which can knock you out on a long trip.

Wheels and tires are 14-inchers throughout the line, with cold pressures of 22 psi. Chrysler claims the gamut of advantages for them, ranging from easier steering through a better ride to longer tire life. MT's policy, for the present, is one of watchful waiting.

Engines are not new, the V8s running from 197 horsepower on the Plymouth Plaza to 325 on the Chrysler New Yorker and Imperial (a special hardtop and the 300-C convertible will be along later). You can still get a Plymouth Six in the model of your choice, or a Dodge Six in Coronet models.

Micronic Purolator air filters that you take out and tap to clean every 5000 miles, and renew only every 15,000, are standard in the whole line. They catch any particle over four-millionths of an inch, which seems safe enough.

New rubber mountings do their part in insulating you from the ever more powerful engines. They are made in the shape of a hollow spool, with steel shells inside and out to which the rubber is *not* bonded. The inner shell attaches to the frame crossmember, the outer one to the engine block.



change after only two years, don't alter engineering and styling together.

Torqueflite, introduced last spring on the Imperial and a factor in that car's winning the Mobilgas Economy Run Sweepstakes, is standard on the bigger cars and optional on all others except the Dodge and Plymouth Sixes and the Plymouth Plaza and Savoy V8s. You can leave this three-speed-forward automatic alone or play with it, as you will. Normal starts are made in first (2.45 to 1 gear ratio), progress silkily through second (1.45 to 1) and end up in direct torque converter unaided by planetary gears. Since the converter alone can increase torque up to 2.7 times, takeoff can use 6.62 multiplication and should

disappoint only the power-mad. Rear axle ratios have generally gone down (numerically) as a result, and economy will of course rise correspondingly if you can resist that impulse to stick your foot through the firewall.

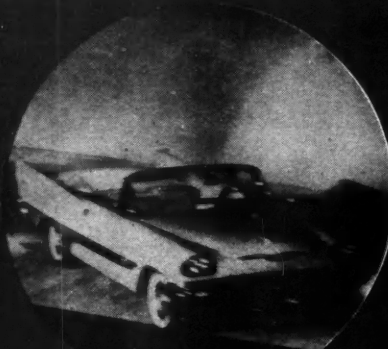
Torqueflite seems just about foolproof. It won't shift into a gear at the wrong speed, nor will it stay in a gear if you go too fast for it. If you press the "1" (LOW) button above 25 mph, nothing happens, and the same goes for the "2" button above 70.

Perfectionists will be glad to know that the transmission

CHRYSLER

by Pete Molson

**NEW
IDEAS
FOR
'57**



the '57 CHRYSLER LINE

continued

skips second as the car comes to a stop, and that an overrunning brake prohibits transmission of torque as it shifts to low in preparation for another start. The lurch is gone.

Center-Plane brakes, introduced last year on DeSoto, Chrysler, and Imperial, have been extended to the whole line for '57. Their advantage lies in the positioning of the wheel cylinders in the same plane, transmitting braking force evenly across the width of the lining to give uniform pressure against the drum. Pressure is also even along the entire length of the lining because the web of the shoe is calibrated in depth.

As you can see, these are not radical improvements but should distribute the wear, slowing it down, and ought to cut down on frequent servicing. And this is the practical result. For do-it-yourself-ers, adjustment is now a cinch. Alignment of shoes and heel and toe adjustments are unnecessary, and even replacement of relined shoes is quick and easy.

We've been fans, though at first reluctant ones, of Chrysler power steering since 1951. Our partisanship has been based on the constant boost that never surprises the driver, and even more on the quick ratio (by comparison with others, at least) that gives the fast maneuvering we need in today's driving. Now new pumps (vane type on some, sleeve type on others) appear. Theoretically they should give a never varying assist with greater quiet; our full road tests in later issues will give a complete report. A very little more road feel is present.

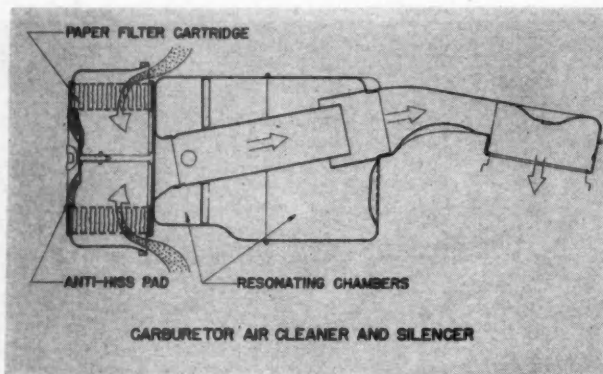
For connoisseurs of family fun, there's a new wagon, surprisingly like the Plainsman dream wagon of last season. In Plymouth, Dodge and DeSoto versions of the four-door, you can



Done with their bumper-tarnishing, exhausts are back where they belong.

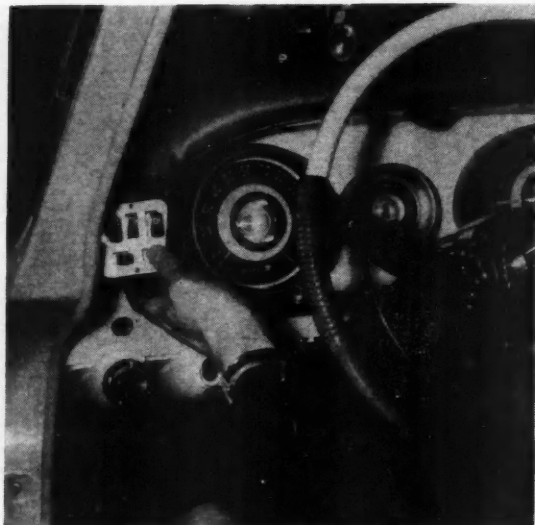


You can't put seats on the floor without paying a penalty in the form of thin cushions.

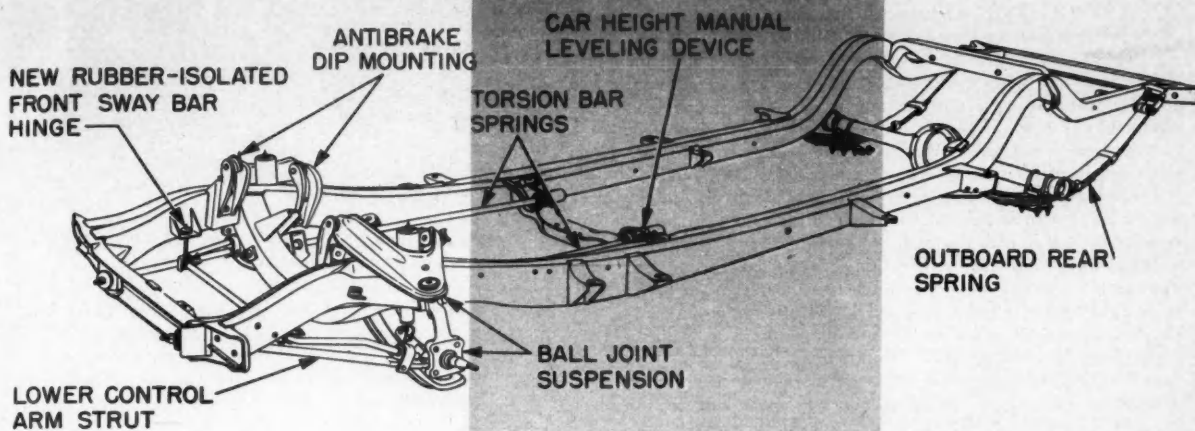


Purolator builds the new paper air cleaner to Chrysler Corp. specifications.

The new Torqueflite control on a Chrysler. Note straight-out left foot.

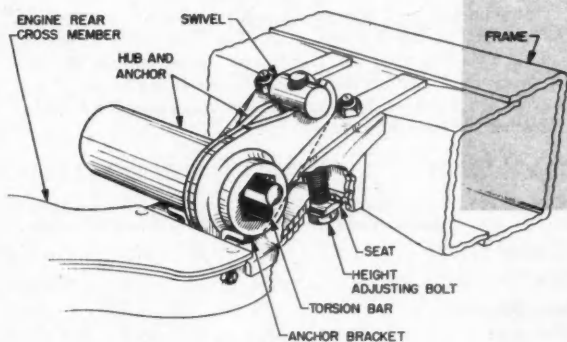


PHOTOS BY JOE WHERRY



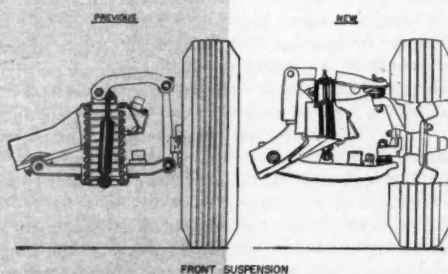
FRAME AND SUSPENSION ASSEMBLY

Above chassis is typical of the entire line, except that lower-priced cars do not have front sway bar.



TORSION BAR REAR ANCHOR (MANUAL HEIGHT CONTROL)

A wrench is all you need to keep the posture young if the torsion bars sag on your Chrysler-built car.



At right, the ball-joint front suspension.

have a rear-facing third seat, entered via the tail gate. There's a well for feet; the gas tank goes in one rear fender and the spare in the other (DeSoto doesn't have any—see page 22). The electric tail gate window operates (A) with a key from outside, (B) with a switch on the instrument panel, or (C) with a switch handy to the back seat itself. Rubber steps, rubber bumpers for the tail gate to rest on, torsion bar hinges and even an ashtray near the rear passengers' feet complete the equipment. The seat folds flat when not in use, and this year you can even have air conditioning in your wagon or convertible.

The various Chrysler divisions still enjoy some degree of autonomy in their handling of the four-headlight question. Imperial and Chrysler take the lead here, providing them as options if your state has given the O.K., and the other makes will eventually follow along. The two inner lights have a high beam filament only and provide a hot spot at the center of the total high beam coverage. Outer lights are old-fashioned bifocals with a diffused high beam or a low beam that concentrates on the ditch for safety.

continued



Refrigerator-like handles can't snag you when shut.



That brick wall is in perfect shape, despite this impression.

THE REVOLUTION at Chrysler Corp. (our term, not theirs) is perhaps most striking in the Plymouth. Anyone who has not driven a Plymouth since 1954 has no conception of the make today. And many owners of '55 and '56 models could see and drive one of these new creations and (if the nameplates were masked) not recognize in it the work of the same company.

Looks play a big part in this impression. As on the Corporation's other products, not a line or contour has been retained. But where the bigger cars (particularly DeSoto) have a family resemblance to their older sisters, Plymouth has only its door-handles to link it with the past.

Startling lowness was the first thing we noticed. Despite this appealing rakishness, we were apprehensive about the penalties to be paid by driver and riders, and with reason. Climbing into the four-door sedan is awkward; entering the hardtop is downright tough for the less agile. The low seats demand that your legs stick out straighter than they ever have in a Chrysler car. Headroom is satisfactory in the sedans, but barely adequate for a person of average height in the hardtop. The rear seat in this most dashing of the new Plymouths is shallow, feels virtually springless at the sides and is actually so over the driveshaft. Though there is ample foot room under the front seat, knee room is much diminished and most passengers will find useful any experience they may have with the jackknife dive. Exit and entry from the two-door hardtop are also hard, even entailing some danger of scraping your back on the top of the door opening. Fortunately, it's rubber covered.

Vision is vast. Despite the lowness of the seat, you look down over the swooping hood in a manner that would be thoroughly satisfactory if it were not for serious distortion. This is worse in the convertible, which wraps slightly over the top as well as to the sides, but it's bad in all models. Don't be fooled by those miniature front vent windows—they work, in spite of their appearance. Plymouth sedans have no opening vents in the rear compartment, unlike the more expensive sedans in the Chrysler lineup. A dash-mounted mirror swivels so anyone can adjust it properly for a view out the lowered rear window without the disadvantage of a blind spot in front. It also gives way if struck in a crash. Its dimmer tab is sensibly marked for day or night use.

The dash is the best ever for Plymouth, with instruments in front of the driver (two are only light signals, alas) and controls well planned and distributed. The glove compartment has practically been lost in the shuffle: its door tilts sharply in at the bottom, you can't see in, and while a 63-inch wide front seat is highly desirable for some purposes, that's just too far to reach for your sunglasses.

The car we drove was a Belvedere V8 with the 301-cubic-inch engine and three-speed Torqueflite, so it took off in more haste than other models. Like every Plymouth, it is intended for regular grade fuel. Pickup was highly satisfactory, with the shifts from first to second and second to high as smooth as any luxury-lover could wish. Pushbutton downshifts, also smooth,



Beauty of the line is the Belvedere hardtop.

slow the car down in short order. The ride (softest in its field in years past) seemed little changed until we approached a curve on the Chrysler Proving Ground track, deliberately remaining in the flat lane rather than a banked one. We looked around for something to hold onto, expecting the old Plymouth rock and roll, but it wasn't there. Don't get us wrong, it definitely does *not* corner like a sports car. But it corners well, especially at higher speeds, with no strain on unanchored passengers (even those in the rear seat). Full-time power steering, faster than most, lets you enjoy this new quality (manual steering takes too much winding).

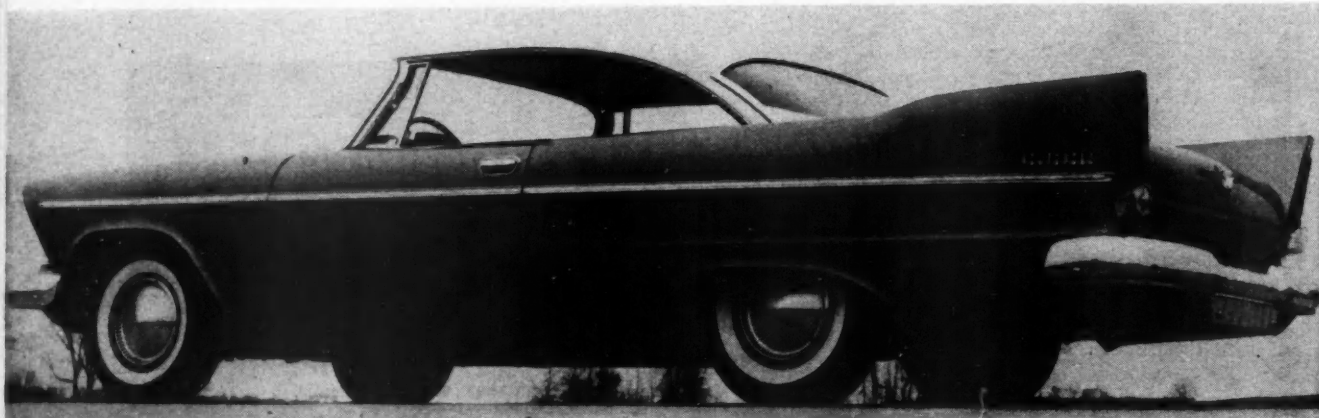
We got our next surprise when the big Center-Plane brakes took hold. Nose dive has been cut 'way down this year (for reasons already explained) but you'll lean forward in a panic stop.

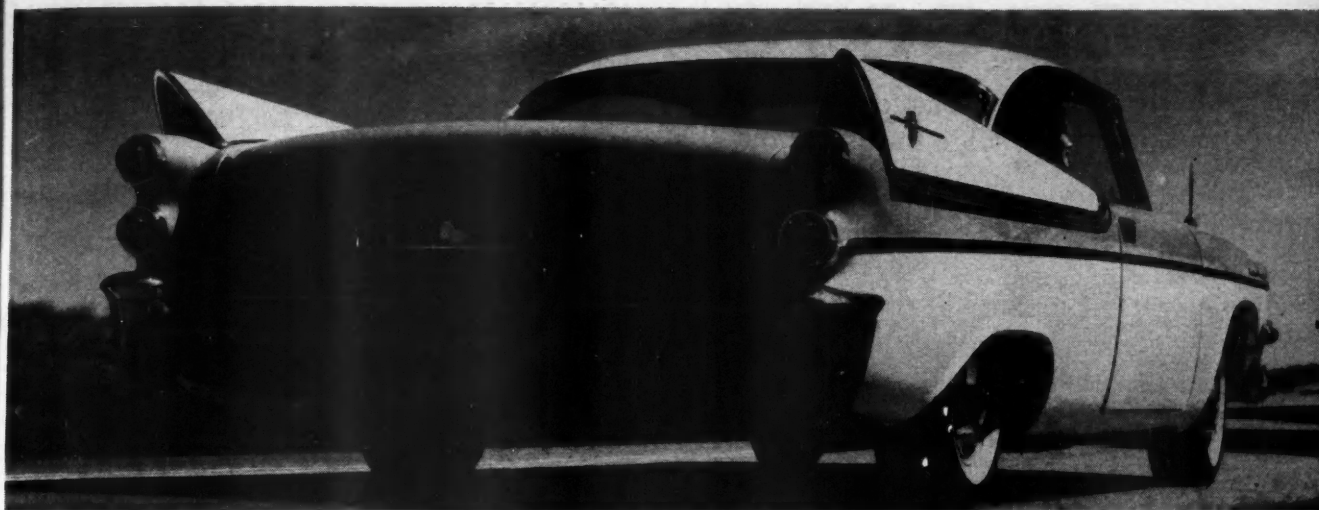
Now, the flatter cornering and nearly dipless stopping would be welcomed by the MT staff on any car. We would be willing to give up a big share of "luxury ride" to achieve it. But the big thing for Plymouth is that its soft ride hasn't vanished and is even better than before under some conditions. Old buyers and a host of new ones should like it.

	Cylinders	Carburetor Barrels	Displace- ment	H.P.	Torque	Bore & Stroke	Comp Ratio
All models	6	2	230	132	205	3.25 x 4.63	8.0
Plaza	8	2	277	197	270	3.75 x 3.13	8.0
Savoy, Belvedere & Suburbans	8	2	301	215	285	3.91 x 3.13	8.5
Powerpack (optional on big V8)	8	4	301	235	305	3.91 x 3.13	8.5

*You'll never recognize it
as the once dumpy*

PLYMOUTH





DODGE

*is hot after more sales with
almost any power you could want.*

		Carburetor	Displace-	H.P.	Torque	Bore & Stroke	Comp. Ratio
	Cylinders	Barrels	ment				
Coronet	6	2	230	138	208	3.25 x 4.63	8.0
Coronet & Royal	8	2	325	245	320	3.69 x 3.80	8.5
Custom Royal	8	4	325	260	335	3.69 x 3.80	8.5
D-500	8	4	325	285	345	3.69 x 3.80	9.25
<small>(optional in all models)</small>							
D-500	8	dual 4	325	310	350	3.69 x 3.80	9.25
<small>(optional in all models)</small>							

IT WAS A PLEASURE to contrast our non-power-steered, non-power-braked Dodge with the more automatic versions of Chrysler's new cars. There was indeed more feel to the steering, as we expected, but the faster response of the power-steered cars had spoiled us and we seemed to have to do a great deal of twisting and untwisting of this wheel.

The car we drove, a Coronet V8 four-door sedan, did have the three-speed Torqueflite and hence got the best from its 245-horsepower engine. Only the D-500s require premium gasoline. Its interior was brighter than that of the special economy model DeSoto (the Firesweep) that we were to drive next, and its exterior was, like other Dodges, gaudier than other Chrysler Corp. products.

Torqueflite on the Dodge (as on Chrysler and Imperial, but neither Plymouth nor DeSoto) combines the starter with its neutral button. This does eliminate that moment of question when you turn the key starter on an automatic-equipped car, it fails to start, and you wonder whether you have a dead battery or just forgot to shift to neutral. It doesn't seem to us to be quite the simplest answer to this problem, but how we would solve it, we can't tell you. We draw the line at an electric switch to flip the transmission to neutral when the key is turned.

Dodge incorporates in its new instrument panel the excellent round, top-of-dash air deflectors that should immeasurably speed up defrosting. They rotate in a pleasingly uncomplicated

manner and, with the new ultra-simple heater/air conditioner, make attainment of interior comfort something that even an average citizen should be able to manage. Like the other cars, Dodge has a radio speaker also mounted horizontally on the panel top. Shades of the "real" Hudson—and the same applies to the modestly sunken floor. All four conventional instruments, aside from the speedometer, are present on Dodge. A black face, light green lettering, and fluorescent red arrow tip make checking the gauges a matter for only a glance.

The speedometer is also easy to read, but composed of what appears to be a row of tiny thermometers side by side. So hypnotic is their action as they "fill up" with red for each five-mile increment that we found our attention straying from the Proving Ground track ahead of us.

The Dodge is nearly eight inches longer than the Plymouth, and it sits on a 122-inch wheelbase compared to Plymouth's 118. Yet the buyer benefits little. There's an inch more legroom in the rear, half an inch less headroom in front; interiors are otherwise the same in space. The trunk, of course, is somewhat deeper.

Redesigned interior hardware is unusually handsome, as are the new exterior doorhandles; Dodge is the lowest-priced line to have them. They pull out and up to unlatch the doors, and where necessary, a keyhole is incorporated in the design.

Road behavior of all the Dodges differs only quantitatively from that of Plymouth on one side or DeSoto on the other: Performance is up, ride remains smooth but is better controlled, especially on corners; and stopping is flatter and pleasanter.

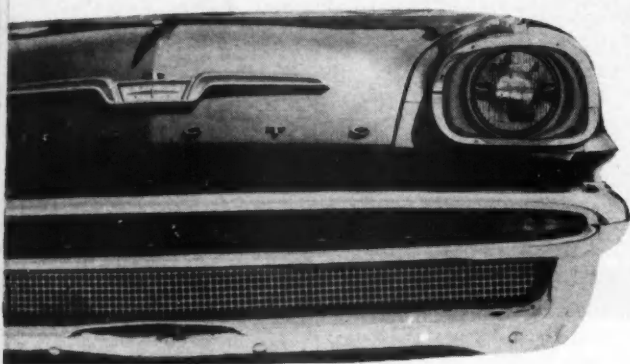
Unfortunately, Dodge shares another characteristic with the rest of the line, and that is an impression of flimsiness. This is also "all new" since '54, and we're very sorry to see it. A door should thud, not clink, when you shut it.



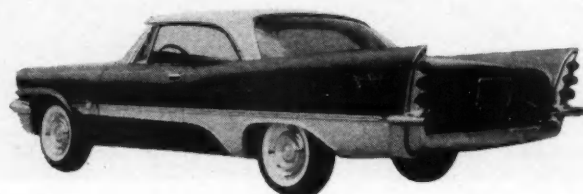
Even the Coronet two-door can have the D-500 engine.

DE SOTO

*has a new economy job and
some industry firsts.*



Engines	Cylinders	Carburetor Barrels	Displace- ment	H.P.	Torque	Bore & Stroke	Comp. Ratio
Firesweep	8	2	325	245	320	3.69 x 3.80	8.5
Firesweep (optional)	8	4	325	260	335	3.69 x 3.80	8.5
Fire dome	8	2	341	270	350	3.78 x 3.80	9.25
Firelife	8	4	341	295	375	3.78 x 3.80	9.25



TO BROADEN its line, DeSoto has brought out a new venture for it, a price leader. It will be called the Firesweep, and will use a Dodge-sized chassis and engine with nearly four more inches of overall length and, supposedly, more prestige than on the lesser line. It comes with either a two- or four-barrel carburetor; the latter provides an additional boot of 15 horsepower, and both are content without Ethyl fuel. Interior dimensions are practically identical with those of the Dodges, or, for that matter, the Plymouths.

But when a rear seat is as low as they are getting this year, a little extra legroom can make a difference. The tape measure shows but a scant half-inch more space here than in the Dodge, yet we were more comfortable. The middle spot is now definitely for poor relations, even in the sedans. There just isn't room for springs.

The Firesweep is a rather restrained, even austere, car for this year of good living. From the driver's seat you look out over a more massive hood than that on the lower-priced lines, yet there is no impression of great size. As on bigger DeSotos, there's a broad, hooded, Lincoln-like panel. A red line moves across to indicate your speed (in steadier fashion than on the

Dodge) and the old familiar four gauges are blessedly present.

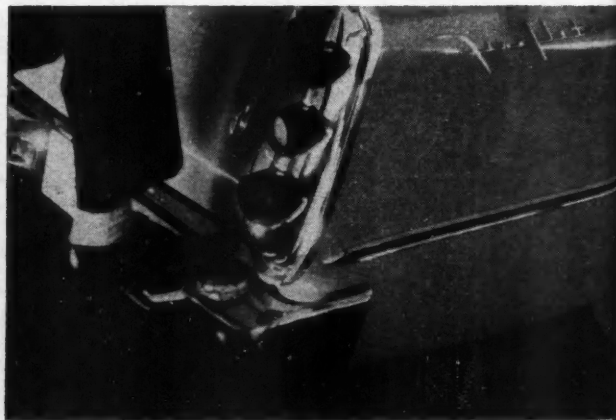
The car's behavior showed the family characteristics, and it's a far better car to drive, ride in, or stop in than ever before. Power steering, at least on this car, lacked desirable directional stability. Whipping the wheel to one side produced, instead of a quick return to straight ahead, a wild dart toward the guard rail of the track.

The two bigger DeSotos are both fancier and more powerful than their little sister. They, and all the more expensive cars in the line, will knock on a regular fuel diet. As has become customary, the Firelife overlaps the Chrysler Windsor—now a low-cost version a little like DeSoto's own Firesweep—in power, and for '57 it equals the Chrysler Saratoga, which replaces last year's Windsor. Thoroughly mixed up now?

The three-seat Explorer wagons will introduce new Goodyear tires with independent air chambers, and hence no spare. They can carry the car at customary speeds for up to 100 miles after damage and should be an important contribution to safety on our ever more crowded roads. And think of never having to change a tire on a Sunday drive! The feminine vote should swing whole-heartedly to this innovation.



Turn your key (one way to close, the other to open) and the rear window scoots up or down.



As though into an old rumble seat, you'll enter the wagon's rear-facing seat like this.

Comp.
Ratio
8.5
8.5
9.25
9.25

Engines	Cylinders	Carburetor Barrels	Displace- ment	H.P.	Torque	Bore & Stroke	Comp. Ratio
Windsor	8	2	354	285	365	3.94 x 3.63	9.25
Saratoga	8	4	354	295	390	3.94 x 3.63	9.25
New Yorker	8	4	392	325	430	4.0 x 3.9	9.25

After six years, a chassis catches up with an engine. Add finned styling that takes a back seat to no other car, and it could mean some sales upsets in the upper brackets.

CHRYSLER



RESTRAINT is once again the keynote of the company's banner-carriers, at least in their exterior treatments. The grille is intentionally similar to that of the '56 New Yorker, and the tail end is also related to last year's. But one surely unplanned result is that, especially from the side and the rear, the Chrysler and the Plymouth resemble one another more than any other two makes in the line!

We got to know a Chrysler Saratoga a little better than we did the other cars at the Proving Ground, so conclusions drawn here are more fairly applied to the whole line than to the Chryslers alone. Hasty assembly was evident and should be watched by the early buyer. "Orange peel" in the paint, file marks, misalignment of interior moldings all abounded. Outside, oddly enough (because this is an all new year) more care was evident than in the first '56s.

Simple and handsome as the new doorhandles may appear, we noted several that were inoperative.

Tester Joe Wherry helped us out at the Proving Ground, and here are some of his comments: "Weight distribution is close to that of last year's models, which makes all the more dramatic the improvements gained through the new suspension.

The car is still nose heavy but cannot be called dangerously so for the average driver. Tearing into a corner, one is immediately aware that the front end has little tendency to plow, that roll is considerably less, and that steering is better. The power steering allows more road feel than formerly but still not enough to suit many of us.

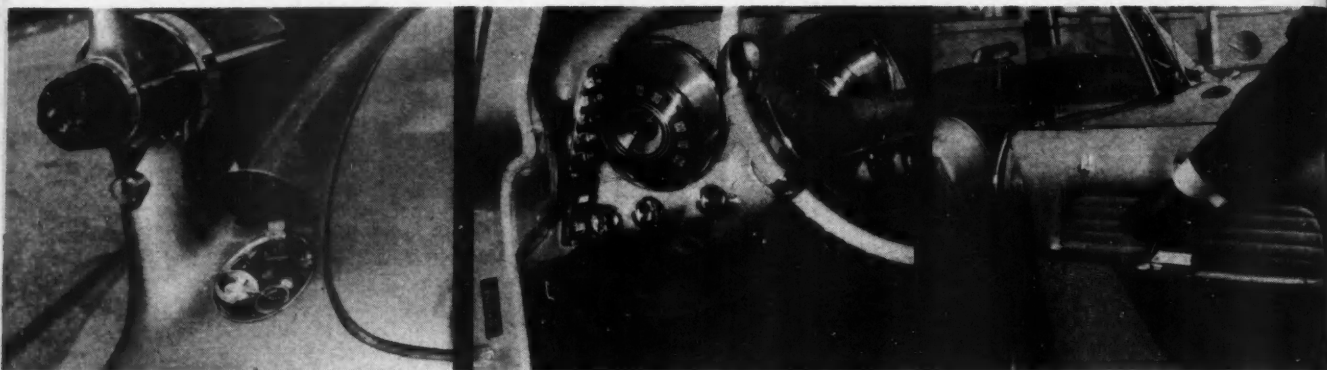
"Some understeer was noted on cornering and correction was easy; we'll have to wait for a full-scale road test to diagnose rear end breakaway, about which we'll admit to some apprehension.

"On hard, fast stops, there is still considerable dipping of the front end; it's less than before, though, and rebound is well damped and not nearly so noticeable." Chrysler does not claim complete resistance to brake fade, but the Center-Planes continue to be among the industry's best.

Armrests, controls, etc. seem to show more thought than before. Interior doorhandles on the New Yorker are like aircraft throttles. Rear vent windows open, unlike the lesser cars, and comfort has been given a lot of thought in nearly every way. We don't know about that lessened headroom and legroom, though—it makes you wonder about a two-tonner.



Middle car in the line is the Saratoga (formerly Windsor).



Gas filler cap can't get lost.

Direction signals are below pushbuttons.

Inside latches are like aircraft throttles.

Restraint has gone out the curved window of the

'57 IMPERIAL

SINCE IT BROKE AWAY from the Chryslers, at least name-wise, the haughty Imperial has been working toward a true character of its own. With 1957, it truly establishes a separate identity. To our surprise, it has abandoned its former stately quality to become the most distinctive, and we think the most attractive, '57 car.

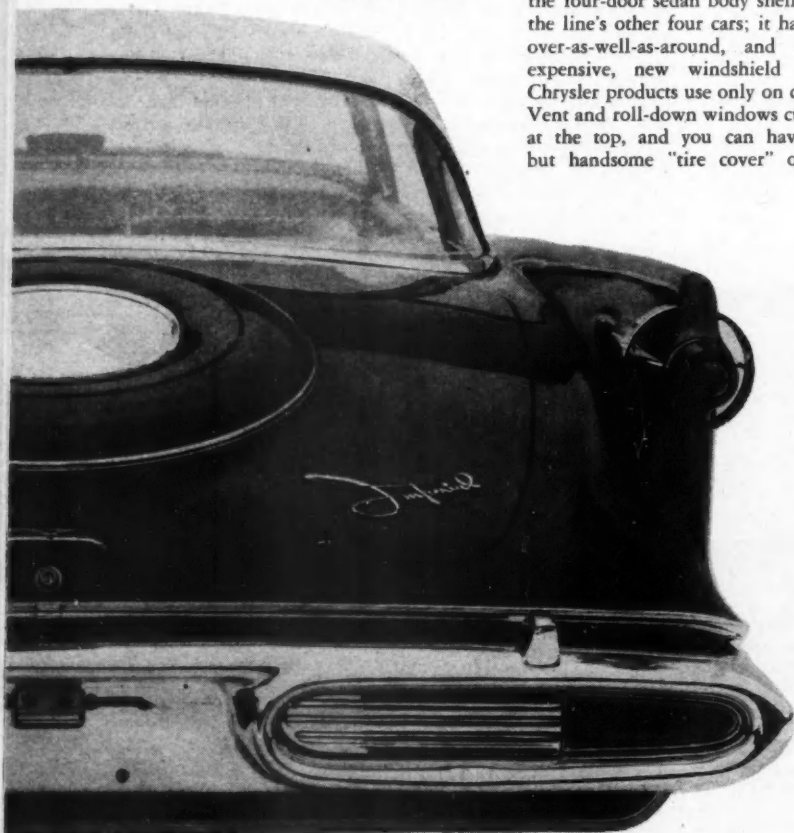
This one deserves a walk around it before entering. Only subtle differences set the four-door sedan body shell apart from the line's other four cars; it has the wrap-over-as-well-as-around, and fantastically expensive, new windshield that other Chrysler products use only on convertibles. Vent and roll-down windows curve inward at the top, and you can have the false but handsome "tire cover" on the rear

deck if you like. Two- and four-door hard-tops use a dual-sectioned roof (will it be transparent for '58?) that really sets them apart. And there's a convertible that could make Eldorado buyers think twice.

Through the new wheel with its padded spokes, you command an instrument panel with more than a touch of the classic. Giant twin dials are supremely readable. Black light helps at night. Torqueflite buttons, including the neutral start control, are disposed vertically—1, 2, D, R, N, reading up at the left edge, and below them is a curious new teeter-totter turn signal. You press the top for a right turn, the bottom for a left, the middle if you change your mind. We don't see the advantage in taking your hand off the wheel to signal. Heater and air conditioner controls are also vertical, opposite the Torqueflite buttons. The foot-operated emergency brake should be extended to the rest of the line.

The luxury touches haven't been spared elsewhere inside. Window ledges are still leather covered, and each rear passenger has his own ashtray and lighter on the more expensive versions. There are now an Imperial Crown and an Imperial LeBaron (no relation to the original classic), differing only in trim and equipment, as well as the "ordinary" Imperial. These have opening armrests for extra storage. Some models have center armrests in the rear only, and some provide them in the front as well.

Outside of a double-jointed driveshaft, the chassis of the Imperial is essentially that of the Chrysler New Yorker. With greater weight and the same Firepower engine (4.0 x 3.9 bore and stroke, 392 cubic inches, 9.25 compression ratio, four-barrel carburetor, 325 horsepower) its performance will lag behind the strongest Chrysler. But top performance isn't its function. Luxury is what this one has to offer, and it gives full measure.



'57

HUDSON and NASH



A flatter roof and 14-inch wheels lower the '57 Hudson (right) two inches below the '56.

by Don MacDonald

THE AMERICAN MOTORS TWINS, Hudson (above) and Nash, get more alike than ever before as their design matures with the passing years. Past variety in model names, wheelbase and engine options has been eliminated. Each offers a 121 $\frac{1}{4}$ -inch-wheelbase Super (less deluxe) and Custom (more deluxe) models powered by a home-grown V8 of 255 horsepower. The 190-horsepower version of this engine was well-proved by service experience with the "Special" series introduced in mid-1956, and still serves as a potent option on the 1957 Rambler (see page 43).

The 65 numerical jump in horsepower is gained from the combination of a half-inch larger bore, one unit greater compression ratio (now 9.0 to 1), two more barrels in the carburetor, plus breathing refinements. Standard dual exhausts help at the rear wheels but are not normally

counted when rating engine horsepower.

Both cars are two inches lower than last year's equivalent models, making them an even five feet at centerpoint. Reduction in height was achieved by flattening the roof and changing to 14x8.00 tires.

Nash shows signs of receiving the major share of the family's facelifting budget; it takes a sharp eye to detect any difference between '56 and '57 Hudsons, or Ramblers for that matter. Nash fender fronts, formerly occupied by vast parking lights, now sport a genuine dual headlight system, the first in the industry.

Everyone else is marking time, waiting on nine recalcitrant states to legalize the vital improvement. Lincoln, for example, is temporarily installing "fog" lights where the second part of the dual system should be. Mercury and Chrysler products will offer the expensive (to them) optional grille. Hats off to Nash for plunging

ahead; we doubt if any owners will be penalized for their courage.

The single filament lower pair of lights combined with the "city driving" filaments in the upper pair flood a clear highway at 150 watts output. The remaining filaments in the upper pair are used for passing.

Optional new type Hydra-Matic and overdrive are continued on both cars, with three-speed standard. Ultramatic has disappeared with the abandonment of the Packard-supplied engine. The peculiar (to Nash and Hudson) pull-on-the-gear-shift-lever starting has been much improved by incorporating a vacuum cutout designed to prevent inadvertently grinding the starter motor when the engine is running. All six-cylinder models have been discontinued. Body choices, in a variety of new colors, are limited to four-door sedans and two-door hardtops.



Inboard lights on '56 Nash (left) have given way to the first duals. They're standard, come what may.

'57

CHEVROLET

*... chalks up another first with production fuel injection
or your choice of six other engine options*

by Walt Woron

WHAT GIVES THE CHEVY V8 ITS HORSEPOWER?

	CU. IN.	COMPRESSION RATIO	CARBURETION	DUAL EXHAUSTS	OTHER
162	265	8 to 1	2-Barrel	No	_____
185	283	8.5 to 1	2-Barrel	No	_____
220	283	9.5 to 1	4-Barrel	Yes	_____
245	283	9.5 to 1	Two 4-Barrel	Yes	_____
250	283	9.5 to 1	Fuel Injection	Yes	_____
270	283	9.5 to 1	Two 4-Barrel	Yes	Special Camshaft
283	283	10.5 to 1	Fuel Injection	Yes	Special Camshaft

"YOU'VE GOT TO GET UP off the canvas before you can start swinging." With this facetious remark, Chevrolet's General Manager, Ed Cole, has thrown down the gauntlet to Ford. It's apparent that he thinks such improvements as fuel injection, smoother power transition from engine to driveshaft, a variety of V8 engines, and an accomplished face-lifting job on the '56 body will be enough to keep the competition from swinging too hard. Let's analyze these changes so you can make your own decision.

Engine

Do you want practically *any* horsepower from 162 to 283 in your Chevy V8? You name it, they've got it. Two size V8s are available, one the same size (265 cubic inches) as last year, and another one that's been bored $\frac{1}{8}$ -inch to 3.875 to increase its displacement to 283 inches. Outside of the increased bore (stroke remains the same three inches), power is upped by various combinations of raised compression ratios, higher lift (0.398) camshafts, four barrel carburetion, dual four-barrels, and fuel injection (see Engine Chart, page 26).

Outside of these changes, other refinements to the block and accessories have been made: 1) Full pressure lubrication is used to the valve lifters instead of the former metered system. 2) Mechanical lifters are used in engines that have fuel injection and compression ratios up to 10.5 to one. 3) Top deck of the V8 block has been increased in thickness to minimize cylinder wall distortion through over-tightening of the head hold-down bolts. 4) Spark plugs have longer reach and metal heat deflection shields to protect the wires and boots from the heat of the exhaust manifold. 5) Gas passages gradually increase in cross-sectional area in the inlet ports and in the exhaust manifold, for better scavenging and more volumetric efficiency. 6) A new distributor with breaker points directly above the shaft

bearing is used to reduce fluctuations in the gap setting. 7) Front and intermediate bearings are $\frac{1}{16}$ -inch thicker.

Fuel Injection

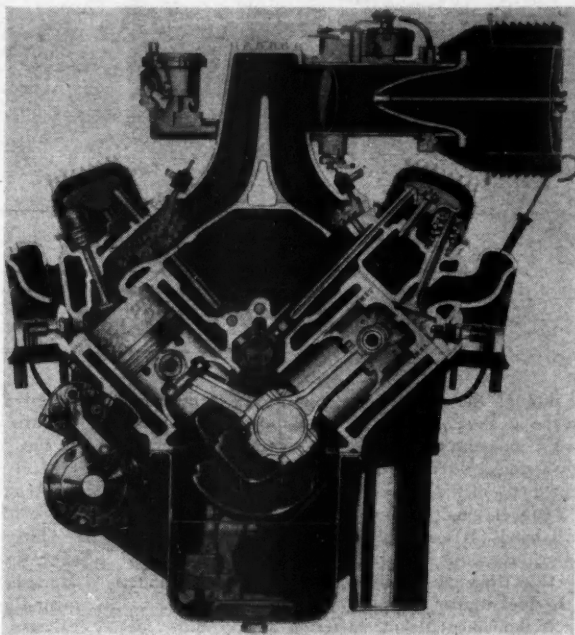
The much-publicized and little understood fuel injection system will be available as standard equipment on Corvette engines, but can also be had on the big V8 powering any other Chevrolet car. Basically designed by General Motors Staff Engineering and built by Rochester Products, the system was simplified somewhat by a Chevrolet engineering team headed up by Chief Engineer Harry Barr, using the talents of such men as Zora Arkus-Duntov, famous designer of the Ardun head.

Basically, Chevrolet's fuel injection system consists of three components: fuel meter, manifold assembly, and air meter. Together these units replace the normal carburetor and intake manifold. Instead of fuel and air being pre-mixed in a carburetor, then being forced through intake manifolding to each cylinder, the air supply is taken in separately through a manifold. The fuel is injected directly and constantly into each intake port, where the two then mix.

The advantages of such a system over the normal carburetor system, as noted by Rochester Products and Chevrolet engineers, are: More overall fuel economy resulting from better volumetric efficiency due to fuel cut-off while decelerating; fast starting and faster warmup during cold weather; more power (about five more hp than a comparable Chevy engine with two four-barrel carbs); elimination of carburetor or manifold icing; and a reduction in stalling tendencies caused by taking turns too quickly or making sudden stops.

The basic operation of the system is as follows: Air is fed to the air meter and is metered past a throttle valve—controlled by the position of the accelerator—into the manifold passages which feed each cylinder. As the air flows through the air meter, a signal is transmitted to the fuel meter, which determines the proper amount of fuel to be fed to the cylinders. The fuel is pumped to eight nozzles, one each in the manifold passage just above the intake valve. There the fuel and air mix and enter the cylinder when the intake valve opens.

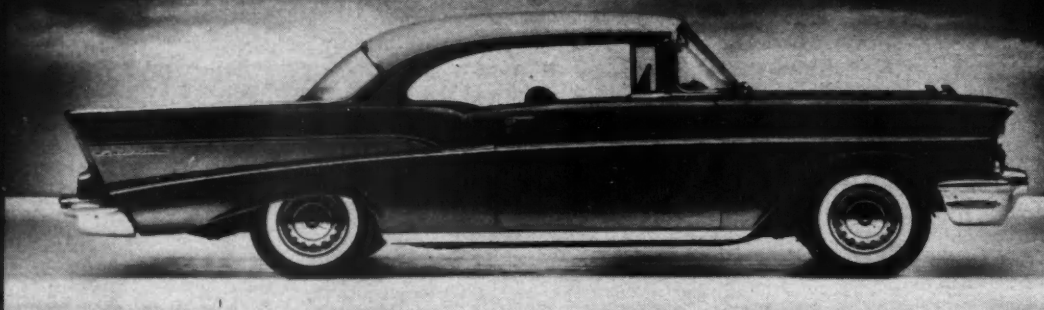
continued



Cutaway front view of the 283-cubic-inch Chevy engine discloses the relative locations and operation of the various components in action.



The complete fuel injection setup looks like this before installation.



CHEVROLET '57

continued

To follow through the operation in detail, refer to the schematic. When the accelerator pedal is pushed down, the throttle valve (A) is opened, admitting air into the intake manifold. At the same time a signal is sent to the fuel meter so that the air/fuel mixture will be in the proper ratio. Fuel to the system is supplied by a conventional engine fuel pump, flows through a filter to a fuel bowl (B), controlled by a float system similar to those used in carburetors. The high pressure fuel pump (C), driven by a cable from the distributor, pumps the fuel under pressure to the fuel control valve (D).

This valve is fundamentally the metering device of the fuel injection system, for through a system of controls tied to it, it determines the amount of fuel that is pumped to the engine. In almost all operation, except wide-open throttle, some of the fuel is bypassed and allowed to return to the fuel bowl. The amount of fuel that spills back into the fuel bowl determines the pressure within the fuel valve, which in turn depends on the position of the spill plunger.

For starting, a solenoid (E) connected to the starter circuit operates to unseat the fuel valve and allow fuel flow past the valve to the nozzles (F) at cranking rpm. When the fuel valve returns to normal, all fuel flows through the center of the valve. There is a ball check in the valve that prevents fuel flow until

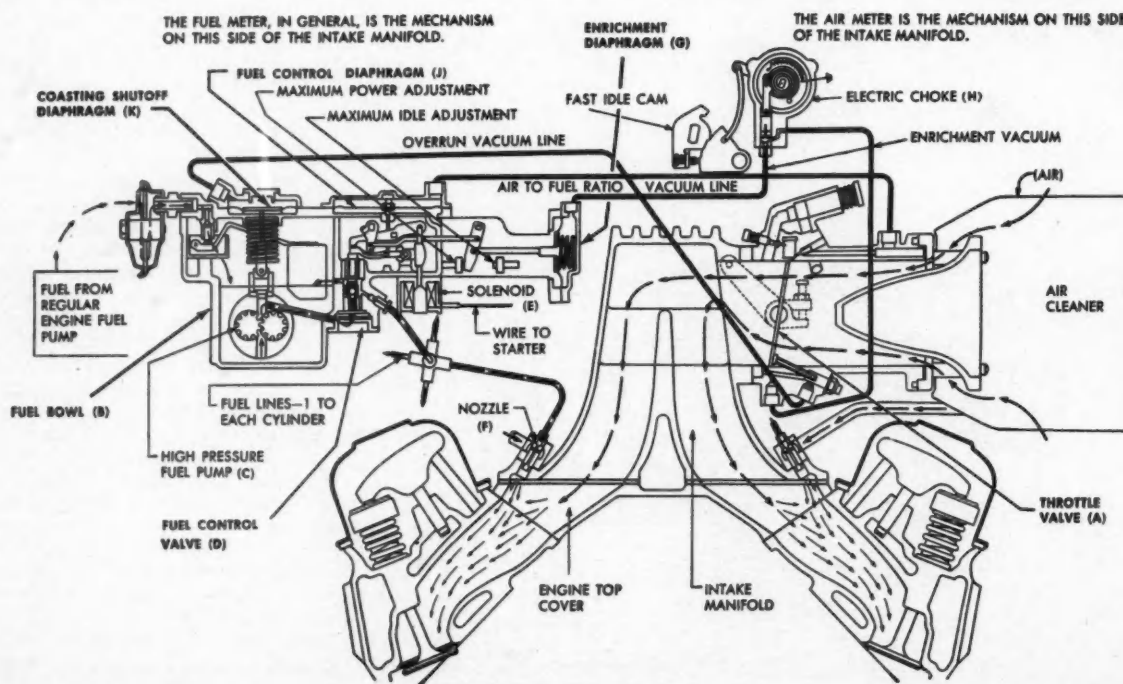
there is sufficient pressure to condense any vapor in the system.

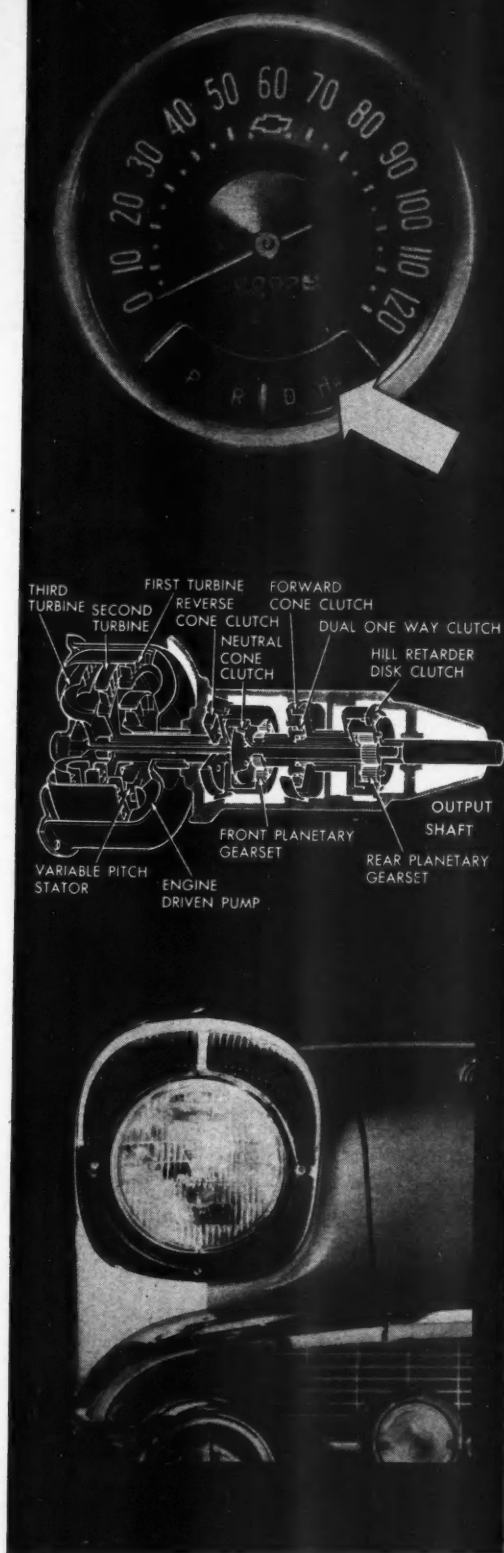
During warmup, the necessary rich mixtures are provided by blocking the vacuum passage to the enrichment diaphragm (G). This is done by a ball check in the electric choke (H) that remains closed until the coil is heated sufficiently to force a piston to unseat it.

During idling, when the airflow is so low that it has little effect on the fuel control diaphragm (J), the venturi signal is strengthened by manifold vacuum through a tube to the enrichment diaphragm. This can be manually adjusted by a needle valve, one of the two manual adjustments possible in this system—the other being for increasing or decreasing the amount of fuel. At idling speeds, 40 per cent of the air enters the system through air galleries at each fuel nozzle.

When decelerating, a spring-loaded diaphragm (coasting shutoff diaphragm, K) reacts to closed-throttle deceleration vacuum to lift a valve in the high pressure pump outlet, which completely relieves pump pressure so that there is no fuel flow.

One of the keys to the success of this system is the design of the fuel nozzles. Instead of discharging directly to vacuum, they discharge to atmospheric pressure and the spray (at pressures up to 200 psi) is targeted across an air duct into the manifold just above the intake port. This allows larger orifices





(0.011-inch), reduces fuel percolation due to vacuum in the fuel lines, and allows a continuous fuel flow at low rpms.

In general, servicing problems should be minor, particularly if the proper factory machining and settings have been made. The only electrical part of the system that could cause trouble would be the solenoid; everything else operates mechanically. If any dirt does manage to slip by the 10-micron fuel filter between the two fuel pumps and the even more efficient filter in the plunger, and then proceeds to partially clog one of the nozzles, the remedy is simple. You take an open-end wrench to remove the nozzle, blow it out with air, and reinstall it. The eight nozzles come in sets, and if one is damaged it is replaced with one of the same coding from another set.

Transmissions

The manual three-speed transmission still remains the basic transmission for the '57 Chevrolet, with overdrive as an optional extra. Also available on the six and 265-V8 is Powerglide; on the bigger V8, you can get the new Turboglide.

Mechanically, Turboglide consists of three turbines and two planetary gearsets, combined with a variable pitch stator and the conventional torque converter pump, all enclosed in a die-cast aluminum housing (lighter by 82 pounds than last year's Powerglide). In very simple terms, the forward motion is obtained by the oil in the torque converter rotating one of three turbines in succession, which start rotating dependent on the position of their respective vanes. As the turning force of one of the turbines lessens, another takes over to maintain a constant positive drive with no apparent "shifting."

When the quadrant is positioned at D (its only forward position) and the engine is running, oil is pumped into the converter by the engine-driven pump (see cutaway). The first turbine starts to rotate, driving its shaft and the output shaft through the rear planetary gearset. When it reaches a certain speed the second turbine starts to rotate, in turn driving the front planetary gearset and the output shaft. Next, the third turbine starts rotating, turning its shaft that is directly connected to the transmission output shaft. Eventually, all three turbines are free-wheeling.

When the throttle is floor-boarded for passing, the variable pitch stator comes into play, increasing its blade angle and delivering greater torque to the output shaft.

HR on the quadrant stands for HILL RETARDER, which takes the position (not the function) of LOW on Powerglide. It is used strictly for what its name implies—slowing you down when you're going downhill. Since it operates by creating a turbulence in the oil of the torque converter to impart a drag on the rear wheels, it is of no value for low-gear acceleration.

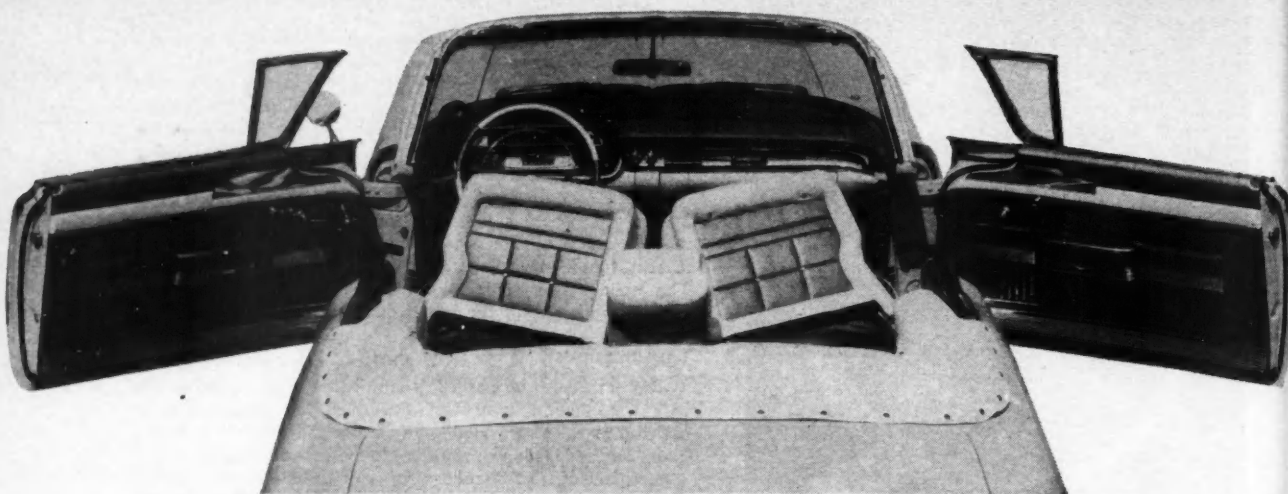
Chassis

Changes in the '57 chassis are minor, with wheelbase remaining at 115 inches, but overall length being increased to 16 feet, 8 inches. Chevrolet has followed the move to 14-inch, lower pressure (22 psi) tires. There are slight modifications to the front suspension and shocks, while the rear outrigger springs have been moved further outboard for the purpose of getting better handling.

Body

Styling changes in the face-lifted '56 bodies are accompanied by an increased windshield glass area (from 69 to 75 more square inches) resulting from the lowered hoodline, and a new ventilation system. Air for the passenger compartment is taken in through intake screens over each headlight, reaching it through louvered outlets at either edge of the dash panel.

A total of 460 model-color combinations (up 96 over last year), 17 exterior colors (seven new ones) with 16 solid and 15 two-tone combinations, and a statement by General Manager Ed Cole that "It will take more than styling to sell cars (in '57)" just about tells the '57 Chevrolet story—except for driving it (and for that, see page 52).



CADILLAC '57

*Lower, leaner, better-looking
new models are easier to
handle, offer plenty that's new.*

by Don MacDonald

MOST INDUSTRY OBSERVERS rate the 1957 Cadillacs as the best looking of that marque since the 1948 model, speaking relative to contemporary products of course. The new lowness is actual, with height reduced three inches in sedan models and two inches in coupes. The new leanness is a stylist's illusion but looks very real.

Height reduction stems primarily from the frame design, original in American production but used occasionally in the past in Europe. Instead of a cow-belly design (where the side rails extrude laterally between front and rear wheels), Cadillac uses a pair of girders that form an "X" when joined at the center by an extremely strong welded joint. The body is mounted on outriggers extending from the frame, and is protected to some extent from midship collision damage by beefed-up rocker panels.

We had a chance to drive a prototype on the residential streets behind the Cadillac plant in Detroit almost a month before public introduction. Whether stylists' illusion or not, the leanness of the new car made it *feel* much smaller, more pleasant to maneuver in traffic. We can remember once comparing parking older Cadillacs to docking the Queen Mary.

Perhaps the imagined agility is due to the 3.5-inch lower hoodline and much better driving position. It certainly doesn't stem from the dimensions which, other than height and overall width, are slightly larger than last year.

In our short, traffic-pocked drive, we had no chance to make a reportable check on performance. Whenever there was what would ordinarily be a clear stretch, two or three cars would have us bottled in so that their occupants could have a better look at what was obviously a preview of things shortly to come.

Despite the jump in horsepower (up 15 in regular Cadillacs with an option of an extra 25 in Eldorados), we suspect that a performance gain from last year's excellent standards will be hard to detect because there has been no change in torque output. It still stands at 400 pounds-feet for both vintages in either Eldorado or standard form.

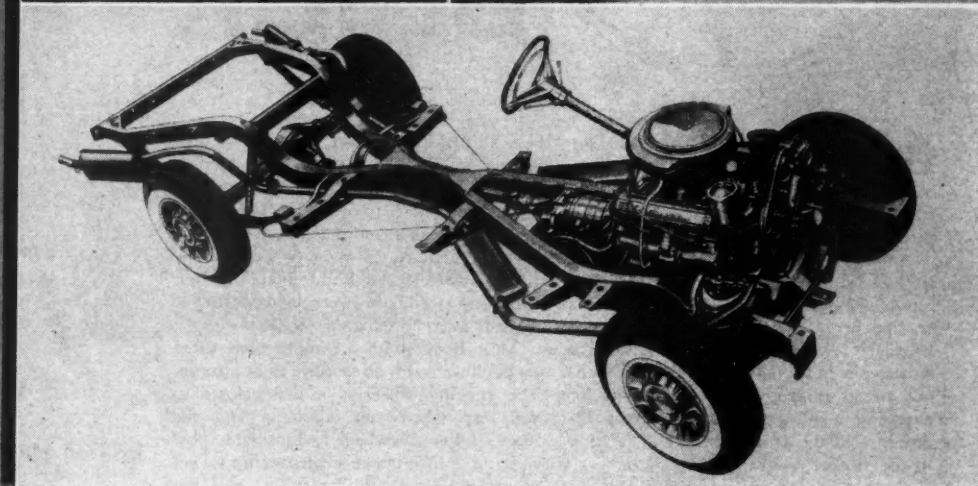
Like most of the new GM cars that have switched to ball-joint front suspension, rearrangement of components, particularly the upper control arms, has greatly improved resistance to that uncomfortable "dive" induced by severe braking. An added bonus is quicker service on the grease rack, as fittings have been reduced to a minimum.

Even in city driving, we could note a marked improvement in handling. Cadillac engineers credit the newly equalized tread (61 inches both front and rear) for most of this. Ride seems to have just about the same happy medium between softness and firmness as before.

The wholly new instrument panel reaches a new high in convenience. There is not a control that is not readily identifiable at night. Even the hidden cigar lighters (they are immersed in the ashtray) have lighted markers above their location. The glove compartment has been moved to the center of the panel so that the driver can reach it. Both application and release of the parking brake are foot controlled. Air conditioning, an oft-specified option with Cadillac, has been moved up to the cowl and controls are quite simple.

We do have a fairly major complaint, especially since we do not own a Cadillac but nevertheless have to defend ourselves against them. Despite vehement denials of company spokesmen, we cannot visualize how the front bumpers (and rear too of the forthcoming Brougham) can protect anything but the Cadillac upon which they are mounted. True, they have rubber tips, but they still amount to the most lethal pair of nursing bottles that a poor young Chevrolet in a parking lot can ever encounter.

There's plenty that's new in the Cadillacs we have just described, but before you buy two of them, hold out for the Eldorado Brougham. It will be introduced at the New York Show (opening December 8) and will feature among other things air suspension, fuel injection, and a close to five-figure price tag. Production will be limited to 500 a year, so get your order in before your wife trades in her ratty year-old mink.



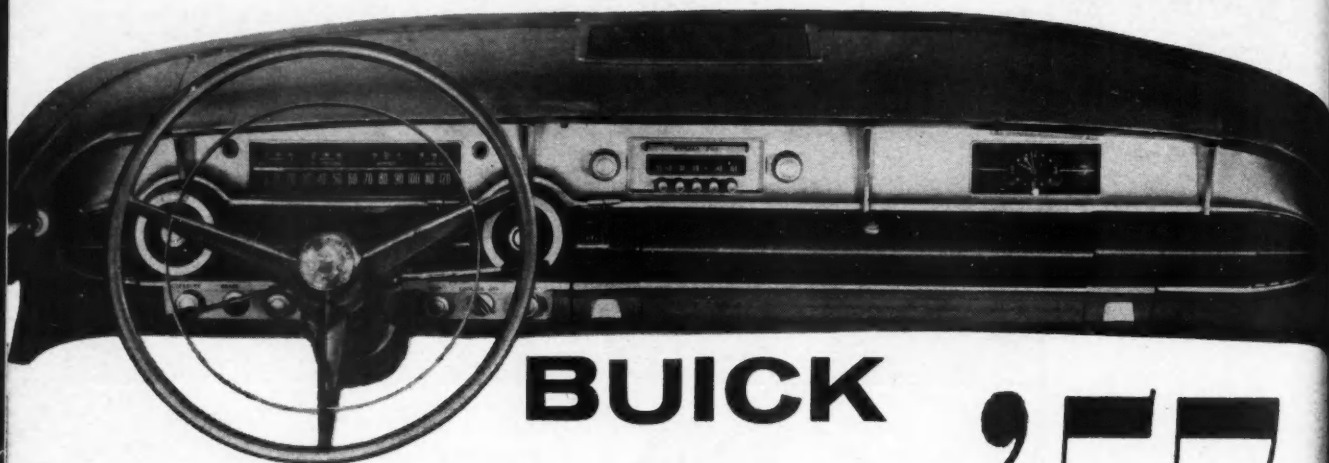
Completely redesigned instrument panel features glove compartment moved towards center of car, truly adequate night lighting for controls. Insert shows convenient new placement for power windows and washer-wiper controls. The leather-covered steering wheel, one of the nicest features of the Cadillac, is now deeply dished.

New cowl vent serves both heater and air conditioner when latter is installed. Vent is much more pronounced and has increased fresh air intake capacity. The button-like object on top of the right front fender is really the fully recessed radio antenna. The hood is lowered 3.5 inches so that in profile view it is below the fender line.

'57 Cadillac offers new concept in chassis design. Departing from the cow-belly, the new frame is an X, formed by a pair of girders joined at the center by a strong welded joint. Structure is extremely resistant to torsion forces, but offers little protection against midship collisions.

Eldorado Seville sports distinctive inboard mounting of fin, cloth covering of hard top. Prestige line also offers Biarritz convertible.





BUICK

'57

BUICK GENERAL MANAGER Ed Ragsdale wouldn't divulge retooling costs for his all-new 1957 models, but we can imagine that it was a whopping sum after seeing the results.

About the only item left over from last year is the 15-inch tires. Buick didn't follow the majority switch to the smaller size because, again in the words of Ragsdale: "We see absolutely no advantage whatsoever in the 14-inch wheel and without an advantage we see no reason for changing it. We personally like the appearance of the 15-inch wheel in relation to the size of the car . . ."

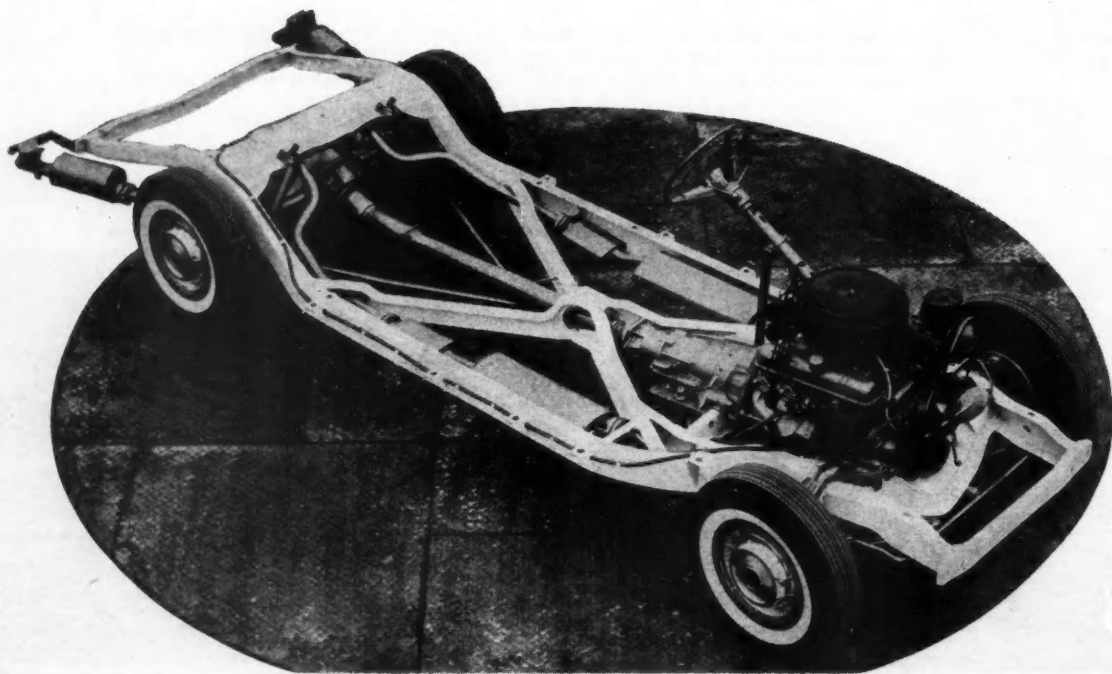
Fresh new styling comes out best, in our opinion, on the hardtop "Caballero" station wagon. It's a "dream" car without

being billed as such, like the Nomads and Safaris of the past. Wagon production will be upped from 22,000 to approximately 60,000 to meet proved demand; main bottleneck in previous years has been the inability of the supplier (Mitchell-Bentley Corp.) to build enough bodies, which up until now were laboriously rehashed from production sedans.

Most body styles are more than three inches lower with no sacrifice in headroom. The steering wheel is a little closer to your lap when you climb in and the more fully sweptback windshield post requires a little more maneuvering to get around—all the price of styling and not too dear at that.

Only Buick and American Motors hold

by Don MacDonald



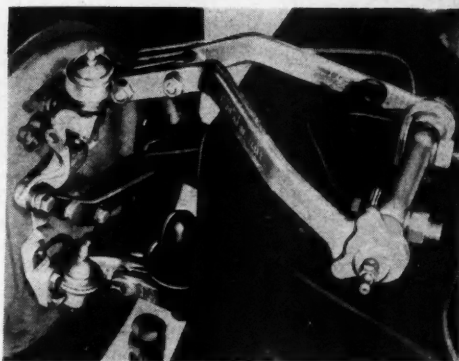
out in favor of four coil springs and torque-tube drive but either company can point to many advantages. Buick Chief Engineer Vern Mathews must have a strong personal preference for this system because with his all-new chassis, he *could* have changed. Obvious advantages are a sealed drive train and easier matching of front and rear spring frequencies. Another not so obvious is that the rear coils have to function *only* as springs. Ride is divorced from power since the axle is

tor showed 0-60 mph ability in the neighborhood of nine seconds, 0-80 mph in 15 seconds, 30-50 in 3.5, and 50-80 in eight seconds flat. Engine noise level during these accelerations was very low, despite the fact that the test car had little if any of the normal soundproofing material installed.

Century, Super, and Roadmaster engines are identical, putting out 300 horsepower at 4800 rpm, 400 pounds-feet torque between 3000 and 3300 rpm. Standard 10

two-barrel carburetor and 9.5 to 1 ratio with optional Dynaflow (8 to 1 with stick shift) should experience no problem.

Dynaflow, standard on all but the Special, has been changed very little. To save wear and tear, you can now "switch the pitch" when in DRIVE range (change to high stator blade angle for maximum performance) only by depressing the accelerator fully to the floor. If anything, this feature, while admirable from a service standpoint, tends to handicap the perform-



New Buicks are safer, thanks to ball joints.

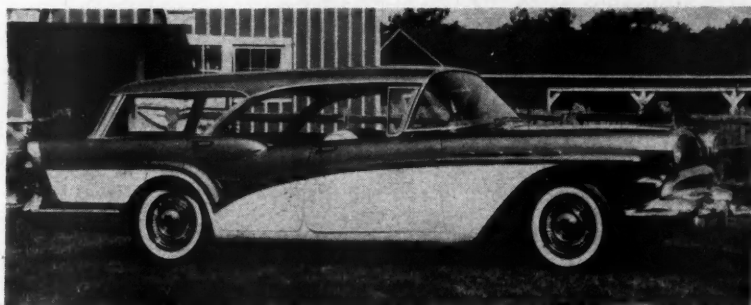
Completely restyled, re-engineered, but still unmistakably Buick, combination of '57 Specials, Centurys, Supers, and Roadmasters should maintain firm hold on third sales spot.

fixed in its relation to the driveshaft. Leaf spring and Hotchkiss drive arrangements must absorb wrap-up from acceleration and braking.

We drove a pre-production '57 Century on the GM proving ground and handling is vastly superior to past Buicks. Ride seems firmer, although it was hard to tell in a car weighted down with handmade and leaded body panels. The new ball-joint suspension design has cut braking dive considerably (Buick engineers say 60 per cent), a contribution to safety as well as comfort. The chance to rework front-end geometry paid off in the complete elimination of erratic braking, an undesirable characteristic of past Buicks. Cornering is surer with much less lean.

Bigger engines across the board (364-cubic-inch displacement this year) really power the new Buicks, especially the Century. Stopwatch checks of our demonstra-

tion showed 0-60 mph ability in the neighborhood of nine seconds, 0-80 mph in 15 seconds, 30-50 in 3.5, and 50-80 in eight seconds flat. Engine noise level during these accelerations was very low, despite the fact that the test car had little if any of the normal soundproofing material installed.



Larger slice of booming wagon market is Buick's hope with this hardtop "Caballero."

ance of the new models, but not seriously.

Much attention has been paid to details in the colorful interiors. The instrument panel has been brought up to current safety standards with fully recessed knobs and standard padding. An interesting version of the "Redliner" speedometer instead of flowing across the panel pops up in little segments as your speed increases. Top of panel is easily removable for service access. Windshield wiper and washer controls have been moved to a convenient spot adjacent to the driver's left hand. Combination heater-air conditioner controls have been redesigned to be more complicated.

BILLED as the "most completely redesigned Oldsmobiles in 20 years," the rockets from Lansing share with Buick Specials and Supers the all-new General Motors "B" body shell. In addition, chassis and engines have been re-engineered, the former in its entirety.

Biggest chassis changes are the spread-out, almost "cow-belly" frame and the switch to ball-joint front suspension. Roadability improvement is not quite so noticeable as in other makes because Oldsmobile has been close to top in this department for a number of years.

We spent a while behind the wheel of a 1957 prototype Super 88 (on October 3, 1956) that already had accumulated an amazing total of 32,400 miles on the odometer. Performance was good though not quite so hot as cousin Buick Century, particularly in the upper passing range. Stoplight acceleration from 0 to 60 mph should work out on the average Olds (Super 88) at a shade over nine seconds. The 30 to 50 time matched the Century at 3.5. The 50 to 80 time was a little slower (10 seconds), possibly because the 277-horsepower engine reaches its torque peak (like Buick, 400 pounds-foot) at a lower 2800 rpm. This engine is standard on all models.

The car felt very stable at extreme speeds. At one point on the straightaway, the needle read 115 mph and there were still more rpms left in the engine. Since the Rockets began, their ride has always been on the firm side, and the newest model is no exception. As in all of the GM products that have switched to ball-joint suspension this year, brake dive has been all but eliminated and cornering much improved.

The new instrument panel has a number of unusual features, all interesting, but at



Oldsmobile's '57 Starfire 98 Holiday hardtop four-door sedan.

least one seems to be for the sake of change—regardless. Copied from the 1956 Motorama "Delta" show car is a peculiar strut mounting of the instrument panel which, while offering greater accessibility to the instruments and possibly better air circulation, involves a wide, panel-length gap between the shelf and the windshield frame. Items as large as a package of cigarettes could slip into the gap and be lost forever. For some inexplicable reason, there isn't (at time of writing) even a grate to cover this yawning aperture.

Best feature is a true dual heater, one unit mounted under either side of the panel. Those who have suffered through lopsided defrosting (with the usual heater-defroster installation on the right side, the passenger invariably gets to see minutes before the driver during a cold-weather warm-up) will greatly appreciate the system. A neat set of electrically actuated, vacuum diaphragms operates the shutters on the blowers, replacing the non-

positive cable controls used on past installations.

As far as we know, Olds is first to use "printed" electrical circuits for the instruments. Now in common use in radio and television construction, the idea should greatly simplify the maze of wiring that confronts anyone trying to fix something behind the panel.

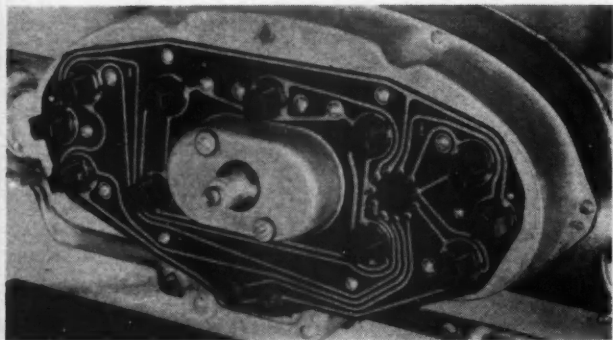
The car is comfortable to drive. All controls are handily placed and the new wheel, with its deeply recessed hub, is another feature adapted from the Delta. The three-piece rear window seems like a return to old times, but blends well with the new styling and doesn't interfere with rearward vision. Forward vision has been improved by a lower hood and 18 per cent more glass area.

Although somehow we expected an outwardly more dramatic change in Oldsmobile appearance, we must agree that it is the newest one in years. You could carry in a basket the parts that are interchangeable with last year's model.

Front view of instrument cluster shown at left.

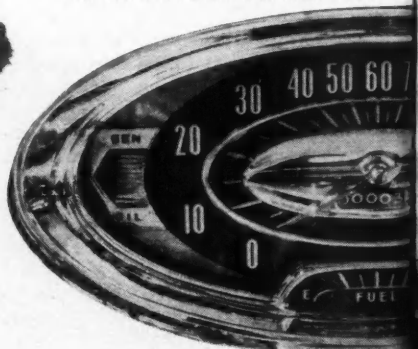
OLDSMOBILE

by Don MacDonald



Olds instrument cluster utilizes printed circuit to eliminate maze of wires usually found behind the dash.

'57

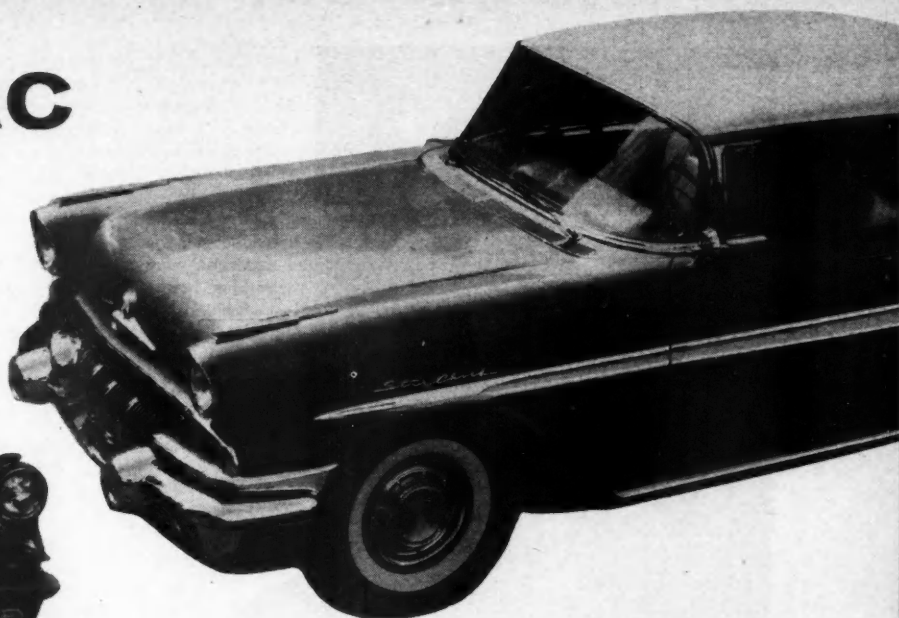
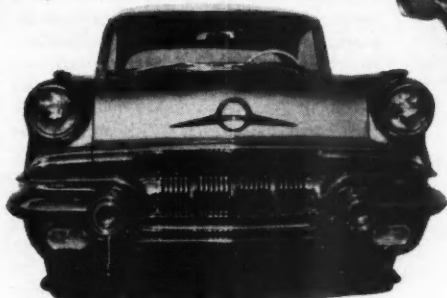


An all-new body and frame, plus mechanical improvements, make Olds really stand out.

PONTIAC

'57

by John Booth



A facelift, three engines, two wheelbases.

OLD CHIEF PONTIAC has two heads this year, one on each fender. He has also, for the first time since 1935, doffed his silver streak. Like Chevrolet, Pontiac has to ride through 1957 with a fundamentally unchanged General Motors "A" body shell which is modern enough in appearance, but unfortunately will cause these cars to tower over competition by as much as five inches despite the new 14-inch tires.

Engine and Transmission

A healthy jump in displacement (from 317 to 347 cubic inches) plus redesigned manifolds, combustion chambers, higher compression ratio, and larger valves add up to a substantial jump in horsepower. The three engines announced so far range from 227 to 270, with the racing package not yet released. The one at the low end of the scale is only for those who insist on a three-speed transmission. The middle engine (252 horsepower) is for Chieftains equipped with Hydra-Matic; the big one comes on Super and Star Chiefs. This has over 10 to 1 compression ratio, requiring 97 octane (Research) or better gasoline.

Interesting detail added to cut valve guide oil consumption is venting the guides to the atmosphere (see diagram). A narrow-waisted intake valve stem mates with a hole drilled in the head.

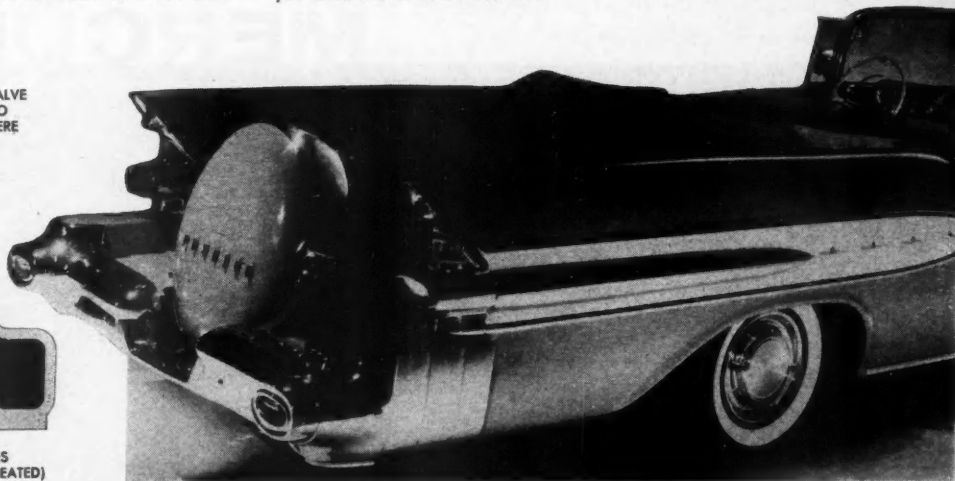
The tremendous suction built up by the negative manifold pressures when coasting is thus eliminated in this area. Combustion chambers are machined throughout in deference to the tricky requirements of the new high compression ratio.

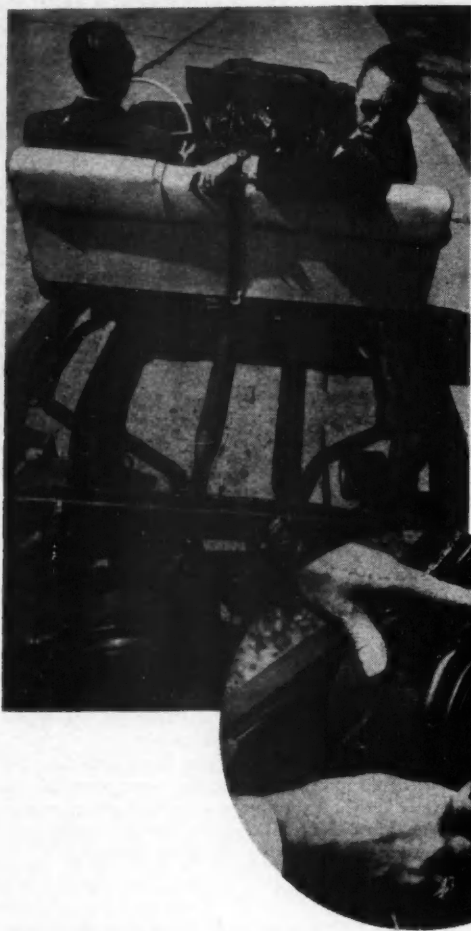
The double fluid coupling type of Hydra-Matic (all-new just last year) is beefed up to accommodate the more powerful engines. Blade angles in the main coupling are realigned for greater efficiency, and the transmission oil cooler is now an integral part of the main radiator. Dual exhausts are again optional.

Chassis and Body

Chassis refinements are all aimed at softening the ride without losing any of the '55-'56 Pontiacs' excellent handling capabilities. Sixty-inch-long rear springs are mounted in huge rubber shackles, but the front suspension remains basically unchanged. Pontiac is one of few this year to hold out against ball joints.

Both the 122- and 124-inch wheelbase models maintain last year's dimensions except for a slight lowering gained by switching to 14-inch tires. The parking brake control is off the dash and on the floor, similar to Buicks of many years past. Interesting accessory is an antenna which extends and retracts automatically as you turn the radio on and off.





Walt Woron (left) and Don MacDonald compare old rear spring shackle (left) with new "tire" type (right and insert).

Ride and Handling

MERCURY CHIEF ENGINEER Harold MacDonald and his assistant for chassis development, George Muller, are old hands at experimenting with true air suspension. Yet nothing in their years of intensive work led them to believe that air (or hydraulics, or torsion bars) in its present state of development offered more than could be gained by highly refining a conventional coil-front, semi-elliptic rear suspension system.

Both engineers felt that ride is not tied to spring type. They reached the controversial conclusion that ride harshness was transferred to the occupants through the suspension mounting points, particularly the front shackles of the rear springs.

Their solution lay in a large (about five-inch diameter) rubber ovoid which acts much like a tire. With atmospheric air sealed in, the inside diameter of the tire engages the spring eye, and as the spring works the shock is taken up by the outer "tread" of the tire against statically mounted cups. There are two of these tires for each rear spring (both mounted at the front shackle position), and the results, combined with other refinements, are little short of amazing. Incidentally, tests show that the tires outlive the springs, and that more than atmospheric pressure only increases harshness.

We drove over the worst dips and bumps that could be found on the Ford Proving Ground, and shock was absent to a degree that we have found in no other car. Those of you who are mathematically inclined and don't have access to a new Mercury can prove it to yourselves by setting up a simple vector diagram based on forces transmitted through the rear wheel to the shackle—but the best way is to drive the car. The new, almost trailing-arm-like, front coil suspension comple-

'57

MERCURY



ments the rejuvenated elliptics in the rear. Undoubtedly the air cushion principle will be applied here when time permits it.

The 1957 Mercury ride is noticeably softer, yet we proved for ourselves on the handling course that the car will out-corner the already excellent '56 version. The primary reasons for this are better weight distribution and cleverly redesigned shock absorbers.

In the past, manufacturers have emphasized slow or high-speed ride; very seldom could the ideal combination of both be found. A softly snubbed car tends to wallow at turnpike speeds, whereas a tightly snubbed car might be uncomfortable to some in the city. The reason for this, of course, is that as speed over a bump in-

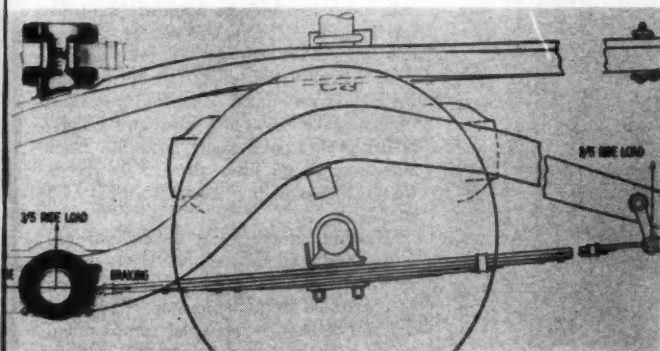
creases, too much fluid tries to crowd through the small orifice of a shock absorber set up for soft ride, and control is lost. On the other type, at low speeds too much fluid gets through the larger orifice, and there is too much control. Mercury achieved its almost ideal compromise by providing a "blow-off" or relief valve, plus another restricted orifice which has no action at low car speeds but acts like a hydraulic cushion at high speeds (when fluid reaches it from the relief valve), or at all speeds over repeated bumps such as washboard roads or a series of chuckholes.

Surprisingly enough, Mercury engineers do not expect more wear from their new 14-inch tires. They reason that tire wear is derived from two factors—load and diameter, or revolutions per mile.

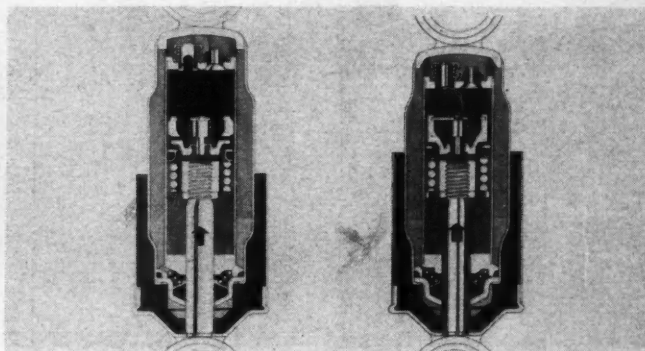
The 1956 Mercury weight distribution was approximately 56 per cent front and 44 per cent rear. This year the redesigned chassis provides 52 per cent front and 48 per cent rear. Thus, while the tire revolves more revolutions per mile, the improvement in weight distribution should provide at least equal, and possibly better, tread durability (providing the tires are rotated periodically).

The brakes have been redesigned to go with the better weight distribution and decreased wheel diameter. Lining width has been increased 1/2-inch at all wheels (front only on cars equipped with 312-cubic-inch engine). Factory tests indicate the new brakes to be more resistant to fade than in the past, with a corresponding increase in lining life.

continued



Top and side views of Mercury's new hollow rubber front shackle setup for its otherwise conventional semi-elliptic rear springs.



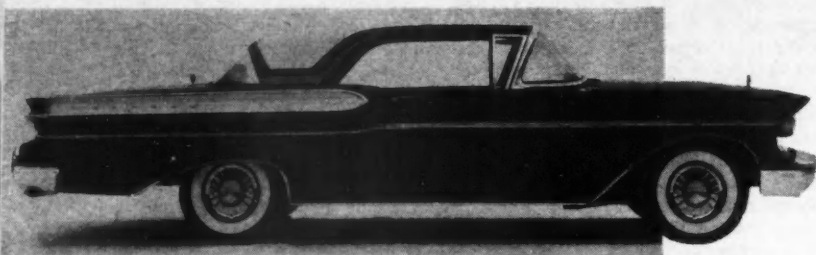
Old (left) and new Mercury shock absorbers compared, showing blow-off valve and new small orifice which control ride better.

Redesigned from tires up, new Mercury features highly refined suspension, more power, and truly radical style.

by Don MacDonald

'57 Mercury Montclair four-door hardtop.





MERCURY '57 continued



Performance

Mercury's 1957 engine options start at last year's standard displacement of 312 cubic inches. This, the "small" one, is rated at 255 hp, only five less than the '56 racing package. The powerhouse for this year, available throughout the line regardless of body model, is a Lincoln-like monster with 368 cubic inches and 290 hp. The racing package is yet to come.

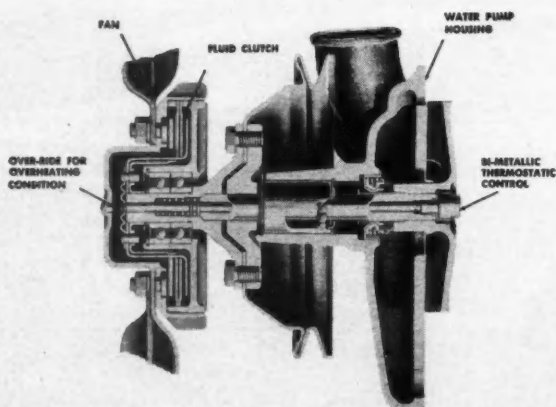
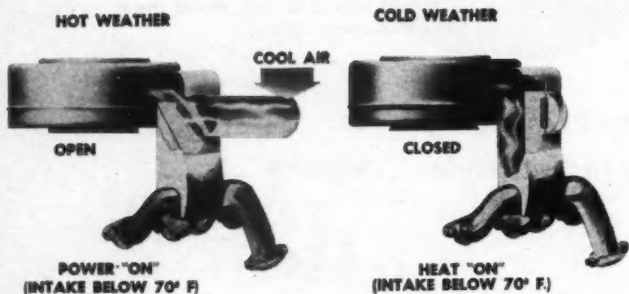
Surprisingly the big boost in inches and horsepower results in only about a 10 per cent increase in performance. We ran some informal stopwatch tests, and achieved 0-60 miles per hour in approximately 10.6 seconds, 50-80 in 11.2 seconds, 30-50 in 4.5 seconds. While this performance is more than adequate, it would seem (and this applies to all makes) that we are reaching the point of diminishing returns. Horsepower-increasing factors (besides borrowing the big engine from Lincoln) that apply to both options include larger intake manifold passages, bigger intake valves and ports, and a higher-lift cam. Compression ratio has been increased to the limit allowed by recent octane boosts in premium gasoline (9.75 to 1).

Heating carburetor air during warmup is accomplished by elaborate ductwork to guide air over the exhaust manifold, and is controlled by a thermostat. All engine air comes from outside the compartment and passes through the ductwork into the new paper-type air filter and then into the carburetor, regardless of whether the heat is on or off. Carburetors on both engines are four-barreled, with provision for only the two primary venturis operating at normal speeds.

Optional on the smaller engine is an on-off fan control accomplishing the same purpose that the installations on postwar Fords did, but operated entirely differently. The fan is hydraulically driven when needed, with a temperature-sensitive control governing the fan clutch. Above 2600 rpm, it does no more than windmill.

Except for details to handle the higher horsepower output, the excellent Mercomatic remains fundamentally unchanged. Full throttle acceleration still insures an automatic downshift which was tops (time-wise) in its day, but is now surpassed in immediate response by at least one of the newer self-change (or rather, changeless) boxes, Chevy's Turboglide.

Mercury is still a hot car, but it is also bigger, and the power boosts in large measure are absorbed by the increase in size, weight, and frontal area.



Driving Ease

As befits an all-new body design, much attention has been paid to handling ease, and by this we refer to the carefully studied placement of controls and not to the easy steering and braking which we have come to expect of all new cars.

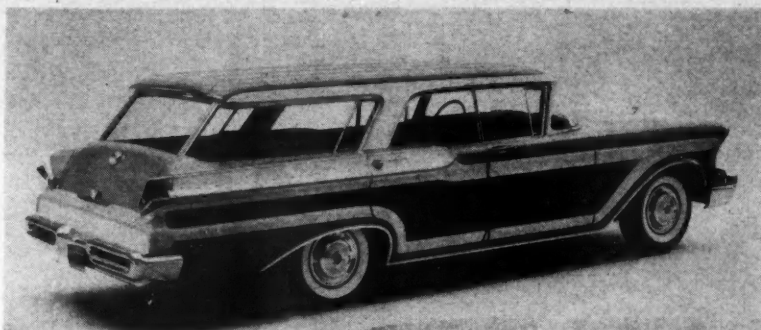
A pushbutton transmission control of a mechanical type similar to that used on Chrysler products is a welcome addition. The neutral button becomes a starter switch when pushed while the ignition is on. (See bottom photo.) The vertical bar right of the pushbuttons is the industry's most convenient parking brake release. The parking pawl in the transmission itself is operated by pushing or pulling on the bar immediately under the gearshift control quadrant.

As in many of the new cars, the automatic window controls have been moved to the cowl that follows the sweep of the wraparound windshield to the driver's left, but instead of a wiper and squirt button in the same area, we find the power seat control.

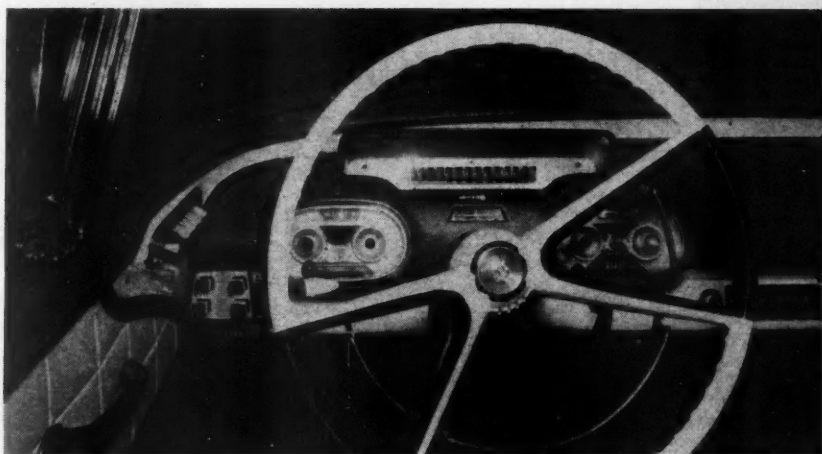
An industry "first" is the optional "Seat-o-Matic," a clever device that permits setting on a dial the most comfortable driving position in a manner similar to conventional controls. When the ignition is turned off, the seat automatically moves back, permitting easiest exit and subsequent entrance. As soon as the key is turned on once again, the seat remembers and returns to the original driving position. (See small photo on right.)

The usual Ford safety package is here with additions for the new year. All controls are more deeply recessed. An outstanding feature common to both Fords and Mercurys is a hood hinged at the front as on Hudsons of yesteryear. It may happen only once in a lifetime, but a conventional hood's blowing open across the windshield is an invitation to disaster. Seats are secured to their tracks by a special rivet which makes the use of safety belts seem more sensible.

Also optional is an interesting strait-

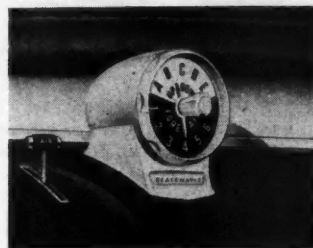


'57 Mercury Colony Park wagon.



jacket for small children. We have yet to experiment with this upon ours, and we doubt that Mercury has either. (They used miniatures of their famous "Oscar" for sizing.) The results of use, however, should be interesting. Install your house-ape in one of these jackets, fasten it to the seatbelt, and if you can ignore the squeals of protest you will at least be sure that the youngster will stay put.

A final and welcome detail is a shrouded cigarette lighter that should prevent sparks from accidentally falling on the upholstery or one's clothing.

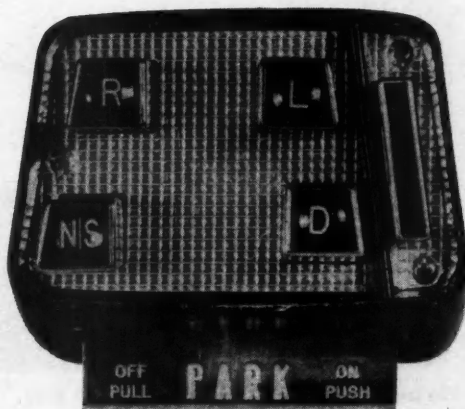


ENGINE: Ohv V8. 312 cu. in. displacement, 255 hp standard; 368 cu. in. displacement, 290 hp optional with Mercomatic only.

TRANSMISSION: 3-speed standard (312 cu. in. engine only) on Monterey and on Commuter wagons. Overdrive (312 cu. in. engine only) optional same as above. Push-button Mercomatic standard on Montclair and on Voyager and Colony Park wagons, optional on all others, mandatory when 368 cu. in. engine is specified.

DIMENSIONS: Wheelbase 122 in. Overall length 211 in. Overall width 74 in. Height 58.5 in. Ground clearance 6.5 in.

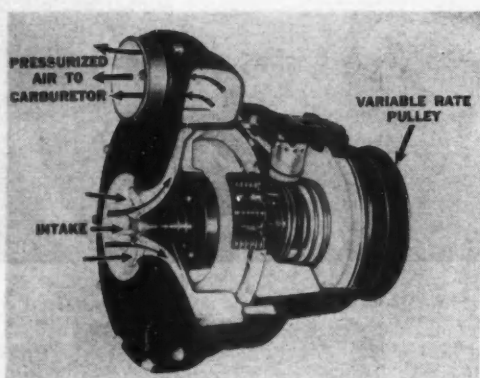
BODY MODELS: Monterey: 2- and 4-door sedans, 2- and 4-door hardtops, convertible, 2- and 4-door 6-passenger (Commuter) wagons, 4-door 9-passenger wagon. Montclair: 4-door sedan, 2- and 4-door hardtops, convertible, 2-door 6-passenger (Voyager) wagon, 4-door 9-passenger wagon in Voyager and Colony Park (simulated wood trim) version.



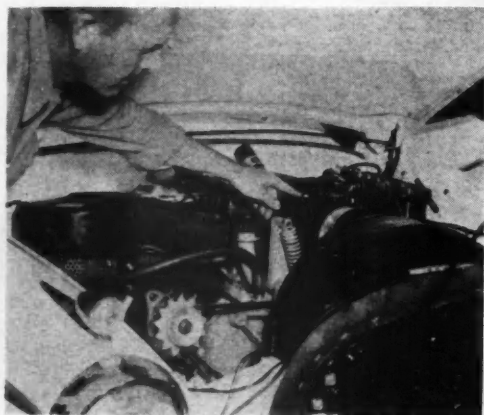
STUDEBAKER '57

Some surprising new engineering features make impressive improvements in the '57 models.

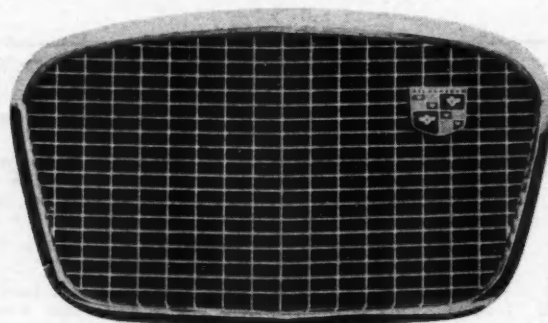
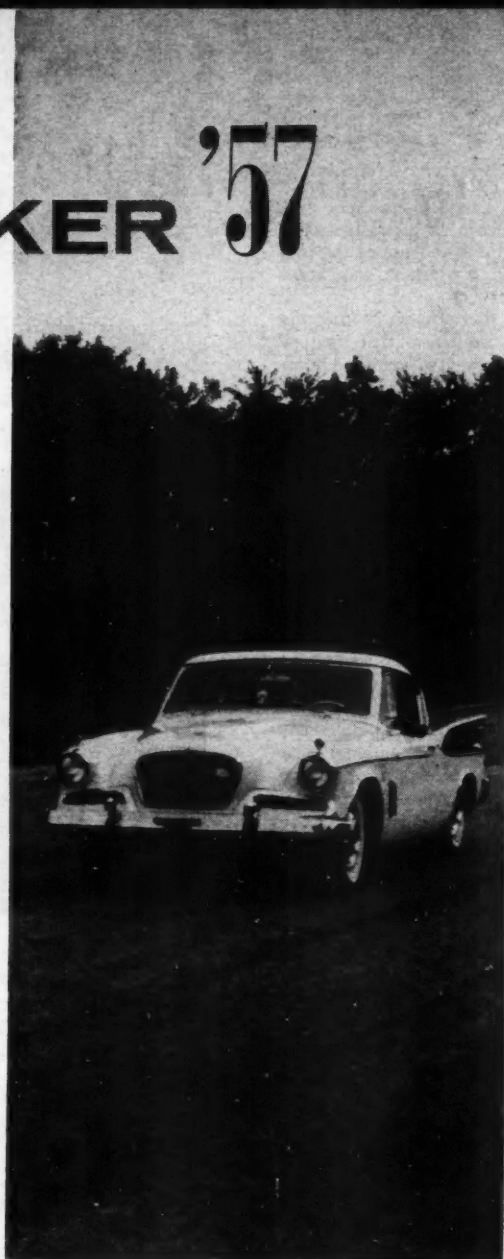
by John Booth and Paul Sorber



Heart of the new Golden Hawk is the McCulloch supercharger. It crams 30 per cent more fuel/air mixture into combustion chamber, increasing engine horsepower.



The new Golden Hawk engine—a 289-cubic-inch V8 with blower.



The simple, neat and functional interior of the Silver Hawk has no bulky wrap-around.



STUDEBAKERS may not be all new for '57, but they do possess an impressive list of new features, both in styling and in engineering. We were loaned a new Golden Hawk, star performer in the '57 Studebaker line, for a pre-release date test of these features. Our impressions lead us to believe that the considerable improvements in this model, reflecting those in the other models, should result in a major sales boost.

Appearance

As we walked over to the waiting test car at the Studebaker proving ground in South Bend, Ind., we were immediately struck by the fact that the Golden Hawk looked as advanced as most of the other '57 cars we had seen previously. Its 56-inch height makes it about the same as the new four-inch lowered Ford. The well-proportioned fins are nicely accentuated by the painted panels and twin antennas, and the hood suggests the power which lurks beneath. The center portion of the hood is raised slightly and contains 14 louvers which are only for the sake of appearance. They are not made functional because doing so would increase engine noise in the car.

Engine

Lifting the hood disclosed a major powerplant change in the Golden Hawk. Last year's big Packard engine has been replaced with a greatly modified 289-cubic-inch Stude engine, atop which there now nestles a stock-equipment McCulloch supercharger! A quick check of the engineering specifications shows that this lighter, smaller (by 63 cubic inches), more compact engine produces the same horsepower as its bigger brother (the Packard) did. The supercharger's five-pound boost punches enough extra air and gas into the combustion chamber to provide 275 horsepower, with 333 pounds-feet of torque at 3200 rpm, at the new 8.3 to 1 compression ratio.

Rapid calculations showed that this engine is producing nearly one horsepower per cubic inch displacement; 0.952, to be

more exact. It seemed quite obvious that this change should result in an improved weight-to-horsepower ratio and sorely needed redistribution of weight between the front and rear wheels. There were no available facilities for weighing the car at the proving ground, but we did notice a big difference in handling quality, which we'll discuss further on.

Drive Train

The newest Golden Hawk is delivered with a conventional differential and three-speed overdrive transmission as standard equipment. Our test car was equipped with the optional (at extra cost) Flightomatic automatic transmission and limited-slip differential, introduced on the '56 models. The Flightomatic is a combination torque converter and three-speed planetary gearbox with a double kick-down feature which operates at speeds below 60 mph, shifting back to second or first as the accelerator is floorboarded. We found the full-throttle shift points were at 37 mph (first to second), and 70 mph (second to third), on our test car.

The "twin-traction" limited-slip differential is so designed as to direct most of the engine's power to the wheel having the best traction, thus reducing wheelspin when one tire loses traction on a gravel-strewn, wet, or icy patch of road, or when weight is transferred to one rear wheel during fast cornering.

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Violent cornering produces minimum body lean in all new Hawks. Better weight distribution lessens tendency to skid or go into spin.

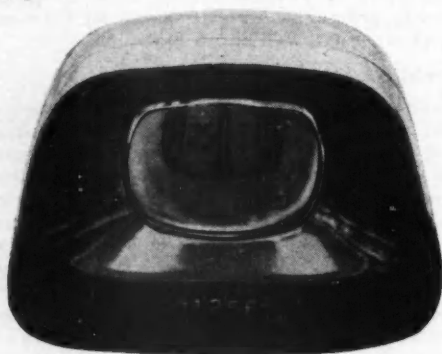
STUDEBAKER

'57

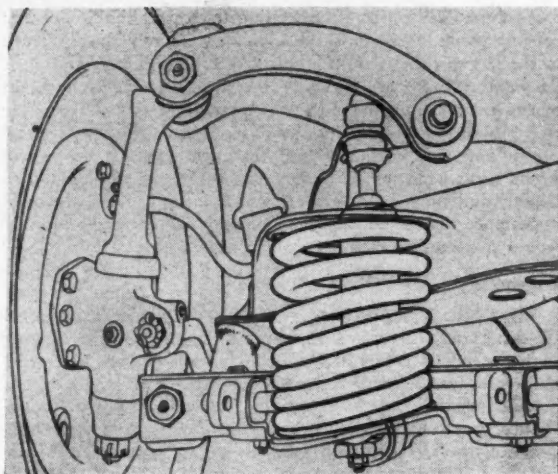
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Leading the new four-door station wagons is this all-new Broadmoor.



Safety-eye speedometer comes on all sedans and wagons.



New variable rate front coil spring compresses at unequal rate, becomes progressively stiffer with increased shock.

All V8 Studebakers with conventional or overdrive transmissions are equipped with the ingenious hill-holder, which prevents the car from rolling backward when you stop on a hill.

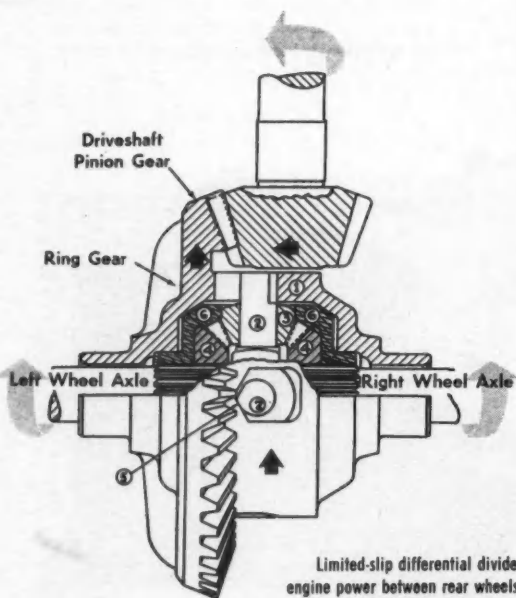
Driving the Golden Hawk

After setting up the fifth wheel and its accompanying electric speedometer, and inspecting the trunk which isn't changed from last year's not too spacious capacity, we got into the car and started the engine. Waiting for the V8 to warm up gave us a couple of minutes to inspect the interior.

There had been no trouble in getting into the car, and the upholstery (gold and white in various combinations) was little changed from last year's excellent quality. Seats on all of the '57 Studebakers are of especially strong construction, a feature formerly available only on police cars at extra cost. Seatbelts are the same, with the buckle in the middle of the car and the other straps fastened to the edges of the doors. We, of course, used the belts, and found them both comfortable and confidence-inspiring. Other standard safety features are: padded visors, a padded roll along the back of the front seat, safety doorlatches, twin-pivoting rear view mirror, and on some models, a padded dash as well.

The instrument panel mounts a full set of Stewart-Warner gauges, including a very accurate speedometer, a tachometer, and a sweep-second-hand clock off to the far right. Turn signals are stock, also. Toggle switches, attractive and simple to operate, control the two-speed electric windshield wipers, the headlights, heater, and most other accessories. The 12-volt electrical system provides sufficient power for the many accessories and for the heavier starting load. Optional power equipment now includes a greatly improved heater.

continued on page 48



Limited-slip differential divides engine power between rear wheels, transmitting major force to wheel with best traction.



'57 RAMBLER V8 SACRIFICES ECONOMY FOR PERFORMANCE IN TRY FOR MORE SALES

ROAD TEST REPORT

by John Booth

ENTHUSIASTIC RECEPTION of the pre-'56 Rambler prompted American Motors to designate it as their "basic volume car." In planning its future, A-M executives were fully aware of the fact that the Rambler's popularity was confined to a rather specialized group—a group that desired a car offering economy and comfort in a compact package. They were also aware of still another group of prospective buyers—those who basically liked the Rambler, but felt they needed a car with more power.

The '57 Rambler is designed to entice this fringe group into the A-M fold, for here is a car offering most of the advantages of the conservative six with a performance factor definitely in the interesting class. Just how interesting? That's what we wanted to know too, so here are the results of this year's first complete road test:

Our test car was a four-door custom hardtop V8 with 190 horsepower ready to do our bidding through a "Flashaway" (Hydra-Matic) transmission and 3.54



'57 RAMBLER V8 ROAD TEST continued

to 1 rear end ratio. This combination, we felt, should assure lively performance in a car of the Rambler's weight and size. A 45-minute warm-up (enroute to our test area) began to show that theory and application frequently go hand in hand. The car is lively, smooth, and quiet. In fact, it compares very favorably with much higher-priced cars in this respect.

How Roadable is it?

We were particularly interested in what the larger engine would do to the steering characteristics. Its predecessors were quick and responsive and, except for a noticeable mush-out in exceptionally high speed turns, the '57 V8 seems to have inherited these desirable traits. Turning effort (without benefit of power steering) is held within reasonable limits even for the distaff side, in spite of a rather small wheel with 4.5 turns from lock to lock (20 to 1 overall ratio). A new steering gearbox, with needle bearings on the roller tooth sides and pitman arm shaft, materially reduces friction at this vital point. The car needs very little correction, for road crown and bumps are effectively dampened out before they reach the steering wheel. There is no hunt or wander. We could detect no fishtailing or undue sway when driving off the road surface onto the shoulder. We liked the tendency of the wheels to return naturally to a straight-line position, which indicates adequate positive caster.

Despite the added weight of the V8, the Rambler is still endowed with better-than-average roadability. There is no uncertain feeling about its willingness to do what you want it to do. Body lean in a wild turn isn't excessive. Should the front end begin to find the wheat fields inviting, you will have ignored plenty of prior warning in the form of a definite heavy feeling in the wheel. We purposely pushed it beyond safe limits and even then the front end didn't wash out completely. Enough control remained to horse it around and the additional torque output of the new engine was a further aid.

How Does it Go?

Acceleration runs were No. 1 on our agenda, so armed with our fifth wheel and bank of stopwatches, we began to tabulate the set of figures that show startling improvements over the best efforts of the '56 Rambler in all speed ranges. Our 0-60 mph time was a creditable 13.4 seconds (compared to 16.1 in '56). During these acceleration runs we particularly noted how much smoother this V8 engine is than the six. There didn't seem to be any vibration points and the Hydra-Matic transmission went through its gear cycle without jerking or protest.

In the passing ranges, brute torque is the master every time. This V8 pumps out 240 pounds-feet at 2500 rpm and will scat the Rambler from 30 to 50 mph in 5.3 seconds (equal to last year's Ford Fairlane and Cadillac 62). Even in the top end you won't be exactly dragging your anchor. It takes only

9.2 seconds to get from 50 to 70, and though it still keeps accelerating at a good rate, it needs another 7.9 seconds to make the speedometer climb another 10 mph.

All of the Rambler V8's times are better than the average of its '56 class, which includes the Studebaker Champion, Rambler Custom Six, Ford Fairlane, Plymouth Belvedere, Chevrolet Bel Air, and Studebaker President. On the other hand, it is only fair to point out that the average of the class would be from 1.2 to 5.6 seconds faster in each category without the inclusion of the first two mentioned cars; all the rest were V8s.

We tried various manual shift techniques but found that if the automatic transmission is left to its own devices, it beats your time by one-half second. Shift points are hard to detect and occur at 19, 31 and 60 mph, respectively.

The V8 engine that made these improvements possible is generally similar to the '56 Hudson Hornet and Nash Ambassador Special. Its oversquare 3.5-inch bore and 3.25-inch stroke figures out to 250 cubic inches. With a compression ratio of 8.0 to 1 and twin throat carburetor, it gives 190 horsepower, which is a substantial jump over last year's six at 120 horsepower. We suspect a power package may come along at a later date, increasing its output to somewhere around 225 horsepower at 5000 rpm. The overhead valve engine is basically simple. The modest compression ratio makes premium fuel unnecessary; the engine shouldn't be sensitive to carbon. We used Mobilgas R without a detectable ping. Dual exhausts and a new cellulose fiber air filter will be standard equipment.



Available with either the V8 or six, the Rambler line includes the Cross Country four-door wagon (bottom) and the Custom four-door sedan, both of which are hardtops.



With some difficulty, you may be able to discern that the '57 Ramblers, at right, are different from the '56s.

Is it Still No. 2 in Economy?

On smooth, level roads we began a series of fuel checks that prove once again you just don't get performance without paying for it. Where the '56 ground out 27.7 mpg at 30 mph, our V8 gave up the ghost at 22.0 mpg. At 60 mph you will pay a penalty of about one mile per gallon for your increased performance. Even so, it's better than all '56 cars (except the year's top economy car—Studebaker Champion) at a steady 30 mph, and comparable to the V8s at all other speeds. Despite our feeling that fuel economy should be a more important factor in overall performance, here is a car that *was* noted for economy that now bows down to the Idol Go. Still, we suppose that A-M engineers could point with pride to the fact that in MT's '56 Rating of Test Cars, only four '56s (Studebaker Champion, Plymouth Belvedere, Olds Super 88, and Cadillac 62) got a better fuel average at steady speeds of 30, 45, 60, and 75 than this new V8 Rambler.

Are the Brakes Still as Good?

Our brake test was particularly interesting in view of the heavier engine and new nine-inch diameter servo action Wagner brakes. You can tell there is some extra weight up front. The nose dips a bit more than the '56, and we had some slight fade after the 10th stop. Recovery was rapid (three minutes at 60 mph) with no sign of erratic action at any time. Pedal pressure without power advantage (as our test car was) is light. The pedal is well placed for convenient operation. The power brake unit boasts a wide pedal for left or right foot operation.

How Does it Take to Rough Roads?

We gave our test car a brutal workout over rough country roads full of curves, grades and potholes. Here is where single unit construction shows up to advantage. Even in the four-door hardtop (they all have a tendency to twist) everything stayed

put. We could detect no squeaks or rattles, and road noises are effectively snubbed by rubber insulation. It is possible to bottom this car—and we did several times—but it takes the severest of bumps at high speeds to do it.

The car isn't too happy with washboard irregularities. It has a slight tendency to "walk," especially if you encounter ripples on a curve. The reaction isn't violent but we were aware of it. Stiffer rear shocks would help control the constant rate coil springs, but at the sacrifice of a moderately soft ride on large (6.70 x 15) tires.

Jounce and rebound produce no violent change in the front wheel geometry. The method of mounting the springs directly over the spindles goes a long way toward reducing distortion so common in most independent front suspensions. This in itself has materially contributed to the excellent steering characteristics of the Rambler.

Is the Body Changed?

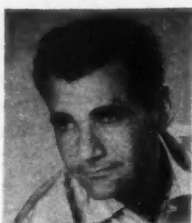
The '57 body remains much the same as last year. Exterior molding and interior motif have been slightly changed. In the case of upholstery and paint colors, the choice seems limitless.

Accommodations for the new V8 engine were incorporated in the basic body design last year so no major change will be noted in the engine compartment other than a greatly reduced work area due to the larger engine. Accessories are reasonably easy to reach, however, and should present no particular problem from the service standpoint.

An improved reclining seat mechanism still offers the luxury of individual settings that has become a much-appreciated trademark of American Motors cars.

On the safety side, in addition to its unitized construction and safety door locks, Rambler offers padded sun visors and instrument panel in a combination optional package, along with dealer-installed seatbelts.

continued on page 48



CLASSIC COMMENTS

by Robert J. Gottlieb

Classic Car Editor

I SUPPOSE that somewhere in this country there are people (crazy, no doubt!) who, for one reason or another, want to trade in their classics (or old cars) on a new car. Problems would undoubtedly be encountered. Would a dealer be willing to take in a 25 year old automobile if he thought it was just another old car? What would a dealer's attitude be if he realized that the proposed trade-in was a classic? To answer that problem I took the Golden Bugatti (Type 46, described in "Driving Around with Walt Woron," November MT) to several new car dealers. I knew it would be interesting to find out how much, or how little, they would allow for the Bug on a new car. I wondered, too, how many dealers would recognize the Bug for what it is—one of the finest classics ever built.

The first stop was at a Ford dealer. If the appraiser recognized the car as a classic he failed to show it. I was offered \$300 in trade on a new Thunderbird. The dealer explained that he based his appraisal on wholesaling "the old junker" for \$100.

A Lincoln-Mercury dealer was flabbergasted when he saw the proposed trade-in. He stated that he did not know the value of the Bugatti and that it could be worth anywhere from \$1000 to \$5000 in trade. He refused to make an appraisal without calling several collectors to ascertain actual value. It made me feel good to find a dealer as honest as this chap.

An Oldsmobile dealer was next on the list. He referred to the car as a "collector's

item" but offered only \$900 on a trade-in on a Series 98 convertible. He admitted that he would give a discount of \$600 if no car were traded in. He also insisted that the allowance on the Bugatti was more than I could obtain from any other source.

A Buick dealer stated that he could not honestly appraise the trade-in and rather than cheat me or his firm, preferred to give me a cash discount to sell the Buick. He, too, stated that the car could be worth anywhere from a nominal amount to many thousands of dollars.

A Chevrolet dealer was the final stop. He took all the wind out of my sails. After I offered to trade the Bugatti in on a new Corvette he stated "Oh, no, you don't! I read MOTOR TREND, and I recognize you as Bob Gottlieb, the classic car man!"

In line with my continuous policy of keeping enthusiasts abreast of current financial conditions, prices of classic and special interest cars have again shown a marked decline. This is to be expected because money is tighter and this has been an election year. General market conditions cannot be ascertained or determined by isolated instances. Isolated transactions, however, often make interesting reading.

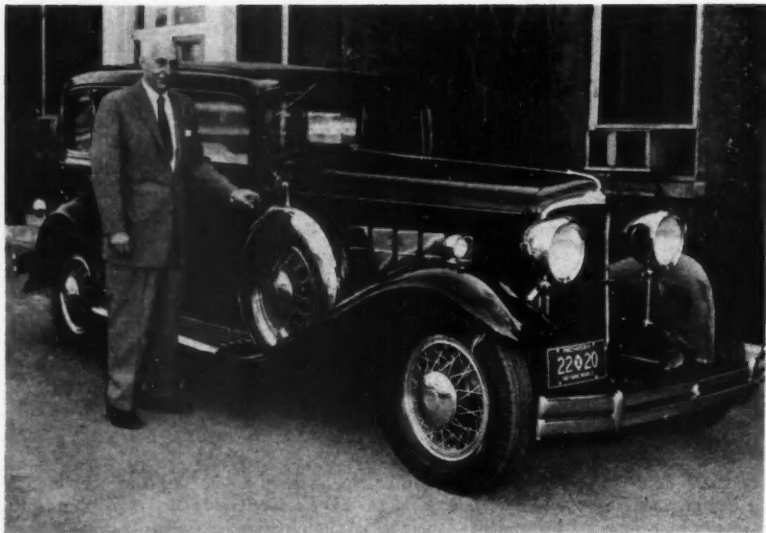
During the past month a owner called and offered me a Reo Flying Cloud, in good condition—any offer acceptable. I inspected the car and found it to be as represented, but I had no use for it due to a lack of garage space. I advised the owner to advertise, which he did without success. Two

weeks later he called me again and stated that he had tried to give the car away but again had no success. He asked me if I would accept the car for free. I repeated my garage space problem, and after numerous calls to local collectors I found a buyer for the car. The price? \$1.

The "four-door Continental" problem arises again. Dr. B. L. Mundhenk of Lima, Ohio, spotted a 1941 Lincoln Custom limousine. He photographed the car and mailed us the pictures describing it as "a four-door Lincoln Continental." This car is not a Lincoln Continental. It is one of the many hundreds of Lincoln limousines built during 1940 and 1941. It was advertised and sold as a Lincoln Custom and not as a Continental.

Cadillac recently built two seven-passenger convertible sedans for Presidential use. They are complete with flag holders, sirens and running boards. Hand grips are mounted on the windshield posts for the use of Secret Service men (see "F.D.R.'s Sunshine Special," Aug. MT, for a similar Lincoln). Three readers wonder whether these custom-built automobiles will be classics of the future. Time alone can tell. Gottlieb can't!

The Auburn-Cord-Duesenberg Club has published an account of the famous race in 1932 between a Duesenberg and a Mercedes to determine which was fastest. This race attracted a lot of attention because of the old problem of which car was fastest. Then, as now, followers of each make claimed highest top speed. The Mercedes was owned by Zeppo Marx and the Duesenberg by Phil Berg, a motion picture director. Both cars were stripped and a 15-mile circular course laid out at Lake Muroc, Calif. At the end of the first lap the Mercedes was in the lead by a very small margin. Thereafter the Duesenberg pulled ahead and won by many miles. The A-C-D Newsletter does not disclose the reason for the sudden decrease in the speed of the Mercedes. It was equipped with incorrect type spark plugs and after the first lap it detonated so badly that its top speed dropped at least 30 to 35 miles per hour. The driver, Joe Reindl, finished the race, but out of respect for the engine decreased his speed when the trouble arose. And so, the race did not prove which car was fastest, nor would any decision have been reached had both cars continued in perfect mechanical condition. We all know that one car will vary from another of the same make and model. Also, a closed course may place one car at a distinct advantage over another. And, finally, there is a great variance in driving ability. Very often one driver can clip a full second off the elapsed time of another driver of the same car in a quarter-mile drag.



John C. Tooker, Reo Motors president, with company's "new" car, a '31 Reo Royale. Other makers please copy!

WINTHROP A. JOHNS, Mechanical Engineer (M.I.T.) and Member of the Society of Automotive Engineers.
It was through his 13-year study in the field of anti-corrosives that MAGNA-POWER was developed and made effective.



NOW! FULL CORROSION-PROTECTION FOR THE VITALS OF YOUR CAR...

Win Johns, Inventor of Famous Magna-Power Acid Neutralizer,
Now Offers Anti-Corrosives For All 3 Life-Lines of Your Car.

① SPARK PLUGS, PISTONS, RINGS & SHAFT ② WATER SYSTEM ③ GAS SYSTEM

Your car doesn't grow old and weary just from rolling over the road. The BIG reason for a car's aging—lack of power, failure of pickup, etc.—is that, literally, it is being eaten from the inside!

STOP POWER-STEALING EFFECTS OF INTERNAL CORROSION

Just as a man's own circulatory system can carry disease germs that lead to sickness, so the circulation systems of your car carry break-down potentials that must be corrected. The most destructive of these forces is acid. Every 20 gallons of gasoline holds almost a half-cup of sulphur. During combustion, the deadly metal-eating Sulphuric Acid is formed. This is circulated and re-circulated throughout your oil system. And everywhere it goes, it eats a little here, pits a little there. The damage is extended as accompanying carbon and sludge deposits form on plugs and piston heads.

THIS IS THE TRUE CAUSE OF ENGINE WEAR

It is corrosion, not friction, that causes lack of compression, loss of get-up-and-go, shooting oil, fouled plugs, and all the other signs of tired age in a motor. It is acid that eats at the vital metals like a bunch of termites boring into wood.

Detergent oils help stop the process. So do the additives present in some gasolines. But the sure, safe and positive way to stop it is **MAGNA-POWER**.

HOW MAGNA-POWER STOPS ACID WEAR IN THE MOTOR

Magna-Power is an oil drain plug with an effective acid-neutralizing rod of Magnesium alloy. This rod rests in the crankcase where it is constantly in contact with the oil. The acids prefer Magnesium to any other metal. They eat it rather than the other metals in your engine. In so doing, they neutralize themselves. This neutralization is extended to the entire inside of the engine. The destruction of metal is halted. The formation of sludges, gums and resins is abated. As further engine protection, Magna-Power is tipped with a strong Alnico magnet which also guards against wear by picking up and holding metal slivers.

MAGNA-POWER—THE ORIGINAL ACID-NEUTRALIZER

Johns Mfg. Corp., Dept. M-12, Middlesex, N.J.

THOUSANDS OF USERS HERE IS TYPICAL RESULT . . .

"I just traded in a 1950 Nash Statesman. Installed new plugs at 11,000 miles and soon after installed Magna-Power. Same spark plugs were in the car when I traded in on a new Oldsmobile. They had been in use 41,000 miles and were working as good as new. Used very little oil and was getting 22 miles per gallon. Am enclosing check for Magna-Power for the Oldsmobile. . . ."

ROSCOE E. WAGNER, Knoxville, Iowa

HOW MAGNA-POWER PROTECTS RADIATORS AND ENGINE BLOCKS WITH MAGNA-GUARD

After a long series of experiments and tests, Win Johns has developed a new formula of positive metal to give summer and winter protection to radiators and blocks. We cannot even tell you the names of the components in this invention until the United States Patent Office has granted the patents. But it is a positive-active element designed to prevent oxidation (rust) and to neutralize corrosive acids. Simply drop it into your radiator and forget it. It will protect the fine copper honeycomb of your radiator for the life of your car. It will give you a cleaner radiator, a cleaner block and a cooler, more efficient engine.

HOW MAGNA-POWER PROTECTS GAS TANK, LINE, FUEL PUMP, GAS FILTER WITH MAGNA-PEL

One of the main trouble spots in your car is the fuel system. Rusty, corroded gas tanks, caused by water condensation, can plug up gas lines, fuel pumps, filters, etc. The addition of Magna-Pel anti-oxidant has no effect on gas. But it eliminates oxidation and corrosion, and is a sure way to cut down on breakdowns and expensive servicing. That is what the new Magna-Pel gas tank pellets are guaranteed to

do. They are a special positive-active metallic alloy. Just drop six pellets into your gas tank every 10,000 miles. They simply lie on the bottom of the tank below the level of the gas line. They will effectively prevent rusting and corrosion in the gas tank. This means freedom from fuel line, fuel pump and gas filter trouble caused by rust particles.

THESE ARE THE 3 SIMPLE STEPS TO GREATER POWER, SMOOTHER PERFORMANCE, LONGER LIFE AT LOWER COST

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regular value \$5.70—if purchased separately

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If you already have Magna-Power, you need only Magna-Guard and Magna-Pel

BOTH for \$2.35

regular value \$2.75—if purchased separately

If you are not completely satisfied with any or all of these products, return at any time (years from now, if you wish) for immediate refund.

— SEND NO MONEY —

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MIDDLESEX, N.J.

My car is a _____ (make) _____ (year)

Please send me the Magna-Power anti-corrosives as checked below. You will bill me for the charge as listed, plus postage and slight handling costs. If satisfied, I will remit in check or money order. If not satisfied, I will return the products.

☐ SPECIAL OFFER #1, consisting of Magna-Power, Magna-Guard and 12 Magna-Pel rust inhibitors @ \$4.95.

☐ SPECIAL OFFER #2, consisting of Magna-Guard and 12 Magna-Pel rust inhibitors @ \$2.35.

☐ Magna-Power only @ \$2.95.

☐ Magna-Guard only @ \$1.50.

☐ 12 Magna-Pel inhibitors only @ \$1.25.

☐ I am enclosing payment. Please send postage paid.

I understand that all of these units are sold with an unconditional and unlimited guarantee of satisfaction or my money back.

Name _____

Street _____

City _____ State _____

SEND NO MONEY

FOR AMAZING IMPROVEMENT IN HIGH COMPRESSION MOTOR PERFORMANCE

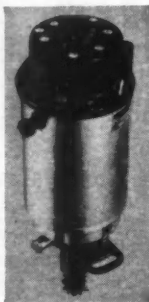
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48 MOTOR TREND/DECEMBER 1956

RAMBLER

continued from page 45

The '57 Rambler is offered in four different body styles with optional six or V8 power in each. The four-door hardtop has been strengthened with heavier metal in the sub-pillar section and reinforced underpan. The new six boasts an increase in horsepower to 125 (was 120) and a new automatic transmission which will replace the Dual-Range Hydra-Matic used in the '56. This transmission is almost identical to the Fordomatic.

Full power equipment (except power windows and seat) is available, as is the superb all season air conditioner. The list of other optional equipment is complete enough for practically any desire.

With two distinct models, each in its respective performance class, Rambler is in a position to appeal to more potential buyers than ever before. Evidence that this car can now carry its own weight is the fact that not only is it the mainstay of American Motors, but A-M President George Romney predicts for it a '57 volume 25 per cent greater than '56.

—J. B.

PERFORMANCE

'57

(Rambler V8)

From Standing Start
0-30 mph 4.2 0-60 mph 13.4

Quarter-mile 18.6 and 74 mph
Passing Speeds
30-50 mph 5.3 50-80 mph 17.1

ACCELERATION

FUEL CONSUMPTION

Used Mobilgas R

Steady Speeds

22.0 mpg @ 30 19.0 mpg @ 45
16.7 mpg @ 60 13.4 mpg @ 75

Stop-and-Go Driving

16.2 mpg over measured course

'56

(Rambler 6)

From Standing Start
0-30 mph 4.7 0-60 mph 16.1

Quarter-mile 20.4 and 68 mph
Passing Speeds
30-50 mph 7.7 50-80 mph 22.3

Used Mobilgas R

Steady Speeds

27.7 mpg @ 30 23.9 mpg @ 45
19.9 mpg @ 60 17.4 mpg @ 75

Stop-and-Go Driving

17.3 mpg over measured course

SPECIFICATIONS

ENGINE: Ohv V8. Bore 3.50 in. Stroke 3.25 in. Stroke/bore ratio 0.93:1. Compression ratio 8.0:1. Displacement 250 cu. in. Advertised bhp 190 @ 4900 rpm. Bhp per cu. in. 0.760. Piston speed @ max. bhp 2654 ft. per min. Max. bmep 144.0 psi. Max. torque 240 lbs.-ft. @ 2500 rpm. TRANSMISSION: Standard transmission is three-speed synchromesh. Automatic transmission is Flashaway Hydra-Matic, four-speed planetary gearbox with two fluid couplings. Overdrive transmission is standard shift plus planetary gears.

REAR-AXLE RATIOS: Conventional 4.1 standard, 4.4 optional. Overdrive 4.4 standard, 4.1 optional. Automatic 3.54.

STEERING: Turns lock to lock 4.5. Overall ratio 20:1. WEIGHT: Shipping weight, four-door sedan, 3175 lbs. Weight/bhp ratio 15.98:1.

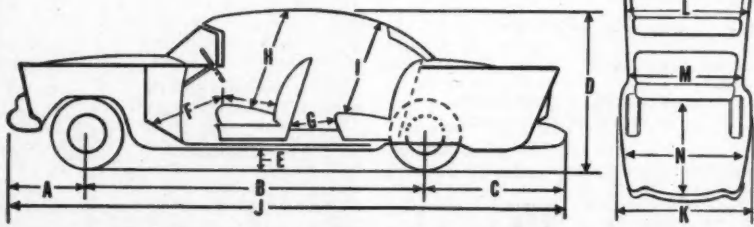
TIRES: 6.70 x 15 tubeless.

PRICES: Not available as we went to press.

DIMENSIONS

A FRONT OVERHANG 32
B WHEELBASE 100
C REAR OVERHANG 51.1
D OVERALL HEIGHT 58.4
E MINIMUM GROUND CLEARANCE 6.9
F FRONT LEGROOM 43.0
G REAR LEGROOM 42.0

H FRONT HEADROOM 36.8
I REAR HEADROOM 36.0
J OVERALL LENGTH 191.1
K OVERALL WIDTH 71.3
L FRONT SHOULDER ROOM 57.7
M REAR SHOULDER ROOM 57.6
N TRUNK CAPACITY 22.4 SQ. FT.



STUDEBAKER

continued from page 42

We now moved the transmission range selector to DRIVE, released the brake, and drove out onto the proving ground roadway. Vision through the gently curving non-wrap-around windshield was excellent and a pleasant relief from the eye-

straining distortion found in some other automobiles.

At about 32 mph the variable-rate drive to the supercharger cut in, and the surge of power was a wonderful feeling, accentuated by the pleasant whine of the blower mixed with the rumble of the standard (on all V8s) twin exhaust system. Factory engineers assured us that newer designs would eliminate this supercharger whistle on cars produced within

a few weeks, which seems like a mistake to us. That whine is a lovely sound.

Acceleration: On reaching one of the straight and level stretches of the proving ground road system, we checked our fifth wheel, wound our stopwatches, and tightened our belts (safety type). With a lusty jolt in our backs, the Golden Hawk roared (and whistled) away from the starting line. After making several runs in both directions for each speed, we averaged our results (see table, page 50).

Strangely enough, our acceleration figures nearly duplicated those of the '56 Golden Hawk. The most significantly different value is the speed at the end of the standing start quarter-mile run. The elapsed time is exactly the same, the speed is seven miles per hour faster. Though noteworthy, this is not a very striking difference, and we tend to believe that both the passing speed time and, especially, the standing start acceleration times could be improved considerably.

A possible explanation lies in the fact that we did not have the car in our possession for a period sufficient to learn all of its peculiarities. When, later this fall, we have a Golden Hawk for several weeks instead of part of one day, and we learn its potentialities and limitations thoroughly, we will try it again at our own test center and let you know if our results then are better (or worse).

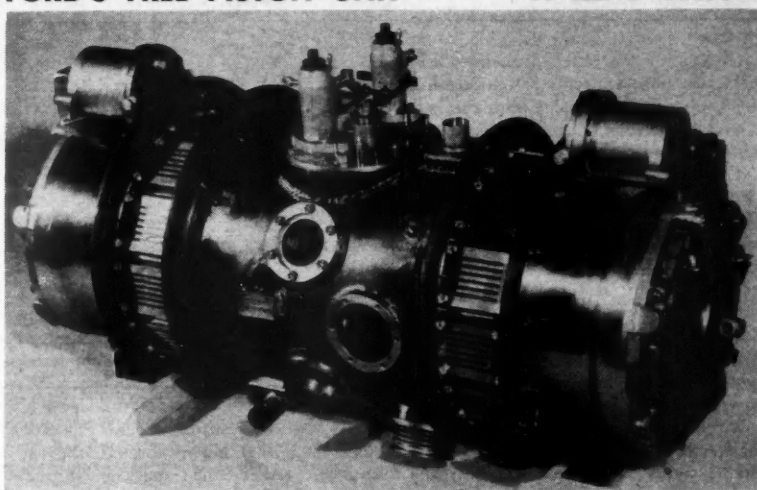
We now drove back to our starting point and removed the fifth wheel for our suspension and cornering checks.

Suspension: Our test car, like all '57 Studebakers, was equipped with the new variable-rate front coil springs, rear semi-elliptic leaf springs, and improved shock absorbers. Under light loads and on small bumps, the springing is firm but quite soft. As the load becomes greater, or the bumps larger, the springing becomes progressively stiffer, so that the ride with one passenger remains as smooth, firm, and comfortable as with five passengers, without wallowing or becoming mushy.

While we were driving around the proving ground, we noticed a '57 Silver Hawk V8 parked off to one side of the road. The keys had been foolishly left in the ignition, so we nonchalantly "borrowed" it. Since we had to return it before it was missed, we didn't have time for any more than a short drive. Though not as snappy a performer as the blown Golden Hawk, it stepped out in a lively manner, cornered well, and the ride was as much improved as its faster big brother's.

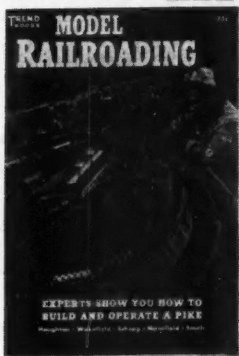
As we noticed immediately, there are several minor differences between the Golden and Silver Hawks. The two-tone paint job is not confined to the fin panels, as it is on the Golden Hawk. Inside, the tachometer is regrettably absent, as is the manifold pressure gauge, and the clock has been moved to fill the space left when the tach was removed. There may be other differences, but we were beginning to feel like thieves, so we returned

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Heart of what may be Ford's powerplant of the future is this free piston gasifier. Measuring 32 inches in length, and half that in height, it produces gases that power a turbine which drives the car.

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*You can move mountains
... create and bridge rivers
... dream up layout plans
and trackwork to put the
Class I roads to shame ...*

This book is dedicated to the fascinating hobby of model railroading and all its fans. Here you can check advantages of each gauge; how to plan your railroad—its shops, towns, manufacturing "plants" along the right of way. Tables and benchwork for best maintenance and operations; electricity and wiring; scenery, structures.

Then into the mechanical divisions with your locomotives and cars, all types are shown. How to paint your rolling stock for most realism, and how to "keep 'em rolling." This fascinating book is at the same time a primer for the beginner, an encyclopedia for the veteran model railroader. Profusely illustrated.

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the Silver and then picked up our Gold.

Steering control on both cars has been made easier and quicker; turns lock-to-lock have been reduced from 5.75 to 4.5, and the dished safety steering wheel controls a more efficient power steering unit. These factors combine with the better weight distribution to provide vastly improved handling and cornering.

The '56 Golden Hawk was so heavy in front and light in the rear, that any slippery spot on a curve was likely to cause a skid or spin. Looking over your shoulder to see where you're going is not a pleasant feeling, and we were happy to notice that this tendency is no longer so evident in the '57 model. We did notice that the limited-slip differential caused a slight amount of rear wheel steering on sharp cornering, but this merely resulted in accentuating a desirable understeer characteristic.

Brakes: Studebaker brakes are really great. Big 11-inch finned drums scoop up cooling streams of air, and the power brake booster gives you a soft pedal. With no strain, we made six stops from 60 mph, maintaining a 15 feet per second per second rate of deceleration, with no pause between these "panic stops." There was no perceptible fade whatsoever. During this brake test, and during our acceleration runs, we didn't notice any grabbing, pulling, or fading. A most impressive performance, indeed, when

compared with some other American cars. **Fuel Consumption:** At this time, we stopped to install our fuel-flow metering equipment for the mileage checks. We expected the fuel economy would be reduced by the supercharger, especially since the air is blown through the carburetor, rather than sucked through which would result in a better mixing of the air and fuel. Supercharged engines also require a richer mixture to provide cooling and to insure against detonation which causes burning of pistons and valves. We were very surprised to discover how little the fuel consumption has been changed (see table). At a steady 75 mph, our figures averaged an even 14 miles per gallon, 1.5 mpg less than our '56 figures. But, at a steady 45 mph, our average of 19.3 mpg was

0.3 mpg better than last year's Golden Hawk achieved. It wouldn't surprise us a bit if owners of '57 Golden Hawks consistently average better than the even 11-mpg mileage figure we reached in stop-and-go driving in the '56 test.

The Other Studebaker Hawks: There are two other models in the Hawk line: the Silver Hawk V8 and the Silver Hawk Six. The V8 is powered by the Sweepstakes 289 engine, same as the Golden Hawk, but without the McCulloch blower. Horsepower is rated at 210, torque is 300 pounds-feet at 2800 rpm. With the optional powerpack (a four-barrel carburetor, manifold, and linkages), horsepower is boosted to 225, torque is jumped to 305 pounds-feet at 3000 rpm. Standard transmission is the conventional three-speed unit, and overdrive or Flightomatic

PERFORMANCE

'57

'56

ACCELERATION

From Standing Start
0-30 mph 3.4 0-60 mph 9.2
Quarter-mile 17.3 and 87 mph

FUEL CONSUMPTION

Used Mobilgas Special
Steady Speeds
19.4 mpg @ 30 19.3 mpg @ 45
16.3 mpg @ 60 14.0 mpg @ 75

SPEEDOMETER ERROR

Read 31 at true 30, 47 at 45,
62 at 60, and 77 at 75

From Standing Start
0-30 mph 3.4 0-60 mph 9.2
Quarter-mile 17.3 and 80 mph

Used Mobilgas Special
Steady Speeds
20.1 mpg @ 30 19.0 mpg @ 45
16.7 mpg @ 60 15.5 mpg @ 75

Read 30 at true 30, 46 at 45,
61 at 60, and 77 at 75

SAVE \$700 and UP "DRAGSTER-500" TURBO-ELECTRIC SUPERCHARGERS

Pat. Design



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COMPLETE

\$149.50 FACTORY ASSEMBLED



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Why pay \$800 for a full race engine? Supercharging is the simplest way to get significant power boosts (40% and up). Operate at will—flip the switch to the off position and enjoy the smoothness and economy that only an unmodified engine offers.



2 HRS. TO INSTALL
GUARANTEED & APPROVED

TYPICAL 0-60 M.P.H. PERFORMANCE

MAKE	Stock	With Dragster
Ford V-8 Fordomatic	12.5	8.1
Lincoln Capri	12.4	7.9
Cadillac -62-	10.0	6.8
Oldsmobile Super-88	10.6	7.0
Chevrolet V-8 Powerglide	12.3	7.3
Buick Century	9.8	6.4
Mercury Mercumatic	11.9	7.5
Chrysler New Yorker	10.8	7.6
Thunderbird	9.5	6.2
Dodge V-8 Powerflight	14.5	8.7

Engineering Features

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transmissions, the limited-slip differential, and all power accessories are extra-cost options on either Silver Hawk. These accessories include power brakes, steering, seats and windows, plus a new heater and radio. Finned brake drums are also standard items on Silver Hawks, as well as on the other Studebaker sedans and wagons.

The Silver Hawk Six is the least powerful and expensive of the Hawks, but it is certainly the best handling and most economical to operate. If you don't particularly want the fastest car in town, you might well look at the little one; it's as much or more fun to drive, in a different way, of course. The engine is the little Champion 185.6-cubic-inch flathead six-cylinder inline mill, producing 101 horsepower, with 152 pounds-feet of torque at 1800 rpm. The Studebaker Sedans: The President series sedans will be equipped with the same engine as the Silver Hawk V8, the Sweepstakes 289, with the powerpack optional at extra cost. President Classics, however, will be delivered with the powerpack as standard equipment. Standard and optional equipment availability is the same as the Silver Hawk V8. The safety-eye speedometer introduced on '56s will be continued on the new sedans and wagons. Magnified readings are displayed on a dial mounted on top of the dash directly in front of the driver, and the illumination is green from 0 to 35 mph, orange from 35 to 60, and red at speeds over 60 mph. All President models have the padded dash and other safety features.

Studebaker Commanders are delivered with a 259.2-cubic-inch engine producing a maximum of 180 horsepower and 260 pounds-feet of torque, or 195 horsepower and 265 pounds-feet of torque with the optional powerpack. Compression ratio is 8.3 to 1, as on all V8s. Otherwise, the Commanders are similar to the President series.

Smallest of the sedans, engine-wise, is the Champion Series, powered by the 101-horsepower, six-cylinder engine. This is the engine that is also mounted in the Silver Hawk Six and the Pelham wagon (see below). These cars are otherwise like the Commander series cars.

Wagons: Studebaker offers its first four-door wagons with the '57 Broadmoor and Provincial. The Broadmoor is produced with the Sweepstakes 289 engine, and the Provincial with the Commander V8, either engine with the optional (at extra cost) powerpacks. Two-door wagons are the Parkview, with the Commander V8 engine, and the Pelham, with the Champion six-cylinder engine. Mechanical features are similar to those of the sedan models, with few exceptions. Headlinings are of new material which is claimed to make the wagons as quiet as the sedans. Another innovation is a special rear suspension system which provides helper springs which take part of the weight on a heavily loaded wagon, giving a better ride and handling than older designs.

—J. B. and P. S.



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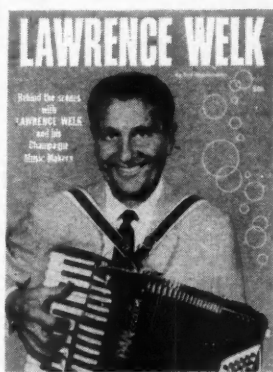
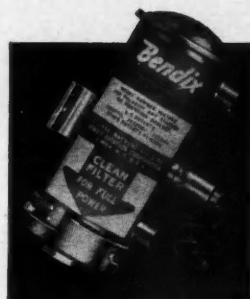
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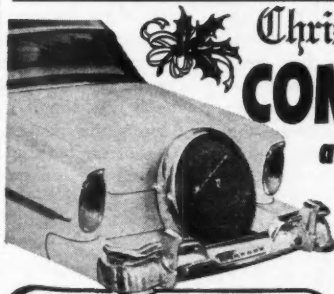
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*On the General Motors Proving Ground
in the Turboglide '57 CHEVY and
fuel injection CORVETTE*

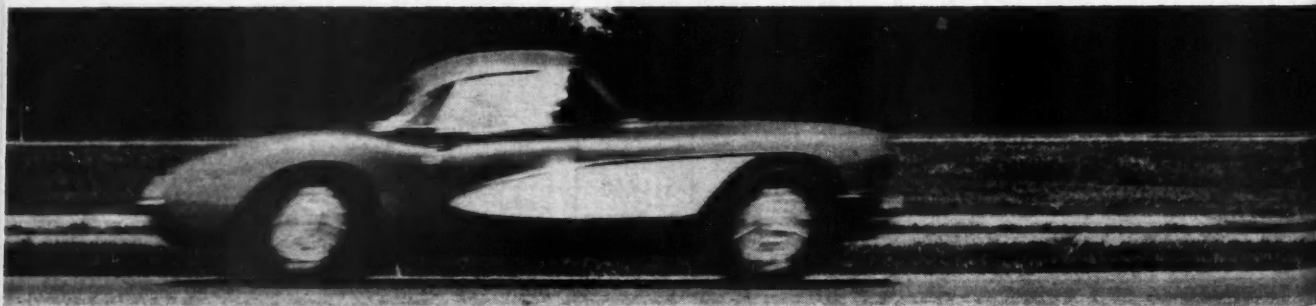
WHEN PETE MOLSON AND I drove out to the General Motors Proving Ground outside of Milford, Mich., we wondered what treat would be in store for us. I remembered over 2½ years ago when Mauri Rose and I traded off taking the newly introduced Corvette around the "ride and handling road," and later steamed around the banked 3.8-mile oval. And I recalled later that year when the '55 Chevy was introduced there and we walked into the auditorium, the then-Chief Engineer Ed Cole remarked, "We've got something here I think you'll like." And later in the day how he impressed me with his superb handling of the car in a power-on broadside that saw us ending up in the direction we had come from. Then the

following year, my treat was driving the Pikes Peak Hill Climber car, the Monte Carlo.

This crisp fall day I knew I'd get a chance to drive a Turboglide-powered Chevy and a fuel injection Corvette, but on what parts of the proving ground and for how long, I didn't know. Meeting us there were several engineers and proving ground personnel. The passenger car was an engineering prototype—that is, it had all the engineering modifications on the chassis and it used the '57 engine, but still had the '56 body.

From the garage we drove out onto the oval track to warm up the car. During this time I recalled some of the changes between the '56 and '57 interiors: the newer circular speed-

'57 Corvette is in the 135-145 mph class.



ometer is no easier to read, though the white letters on dark background are quite legible; all the instruments are shielded from shining on the windshield; control knobs are recessed for safety; steering wheel is now semi-dish; switches would take getting used to for they're not marked or illuminated; heater controls are easier to read; the publicized extra front seat headroom is there, but not noticeable; and ditto for the front seat legroom.

Once I put the quadrant in DRIVE, I noticed absolutely no upshifting sensation. The only feeling you get that's at all like a shift is that if you suddenly lift your foot from the throttle while you're still accelerating, the blade angle of the variable stator as quickly changes. You then get what feels like an imperceptibly smooth shift. Transmission and driveline noise at 60-70 mph in this prototype seemed slightly higher than in '56.

Going down a 17 per cent grade, I dropped it into HR (HILL RETARDER) which immediately slowed it down from 40 to 20 mph. I tried this several times more approaching sharp bends in the road; the slowing action was exceedingly quick—just like shifting down a manual gearbox. Highest recommended speed for downshifting is 40 mph, though the engineers told me that they do it consistently at 55. They also told me that fuel economy with Turboglide is virtually the same as with Powerglide. I have no reason to doubt them, but we'll have the comparison figures in our upcoming road test of the new Chevy.

Ride and handling qualities of the '57 car seem about equal to the '56. If there is any change it's difficult to detect by any seat-of-the-pants method.

After calibrating the speedometer as closely as we could, Pete and I ran some stopwatch performance checks (which also will be later corroborated by our road test). The engine in this Chevy was the 220-horsepower version, with four-barrel carb, dual exhausts, and 9.5 to 1 compression ratio heads. Here's what it did: 0 to 60 mph in 10.1 seconds, 30 to 50 mph in 3.5 seconds, 50 to 80 mph in 10 seconds and well over 100 mph top speed. Compared to our '56 test car, the '57 is appreciably faster on all counts.

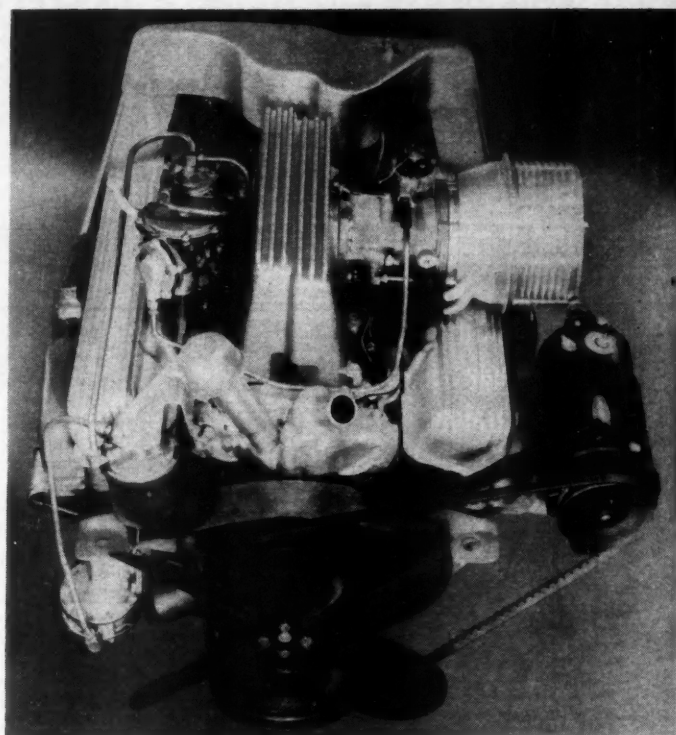
And Then Came the Corvette!

Dessert was saved until last (though little did I know that there was going to be a second helping!). We jumped from the passenger car into the Corvette, the fuel injection development engineer accompanying me on these trips up and down the two-mile straightaway (with loops at both ends). Changes in the '57 Corvette being limited to the engine (at least for the present), I was mainly interested in performance. And perform it does!

From a standstill to 60 mph, using first and second gears of the manual three-speed box, took a mere 7.2 seconds! To 80 mph, still in second gear, took only 11.4 seconds. Not having a quarter-mile marker, we had to estimate and time between the .2-mile and .3-mile marks; our estimate is around 16 seconds. The end of the half-mile came up in 24.9 seconds. In none of these standing-start runs was I actually extending the Corvette. The 250-horsepower engine (9.5 to 1 heads, fuel injection, dual exhausts), was fairly new, so I kept it to a maximum rev limit of 4500. Take-offs were slower than need be too, because of the rear spring wrap-up. Popping the clutch would only succeed in causing the back end to jump, losing valuable time. I tried easing off the clutch pedal, which helped. The rear solution will have to be traction rods, stiffer rear springs, stiffer shocks, or a combination of these changes to absorb all that tremendous torque.

Passing speeds were impressive at the upper speeds of 50 to 80 mph, being 5.1, but 30 to 50 was little better (3.3 seconds) than the passenger car. Second gear was used in each case.

The function of the fuel injection system was notable. Starts were quick. Pumping the throttle doesn't pump raw gas to the



Smooth and powerful are the words to describe Chevrolet's new fuel injection system, standard on Corvettes, optional on all others with larger V8.

cylinders, so you can't flood it. Throttle response is instantaneous. No maneuver could flood or starve the engine (and I *tried* with violent cornering and hard braking). Smoothness is a high point. I took it down to 200 rpm in high gear, then floored the throttle. Outside of a horrible pinging (it didn't yet have the vacuum advance which later models will have), the take-off was as smooth as if it were in low gear, or in high gear at a much higher speed. Nothing but another short-stroke engine with fuel injection or a long-stroke engine (of which there ain't any) could give such low-speed performance.

The second helping of the dessert I spoke of earlier, came in the form of another fuel injection-equipped Corvette. This one had the 283-horsepower engine, with 10.5 to 1 heads, dual exhausts and the special Duntov cam with solid lifters. This one had just been put together the night previous, but since the development engineer hadn't had a chance to unwind it, he said, "Let's go!"

I didn't need a second invitation, and since our time on the long straightaway was limited to just another few minutes, we had to make it fast. Fast we did. Down the strip one way with this 3.7-geared Corvette gave us 132 mph, or around 5500 rpm on the small and hard-to-read tachometer. Back the other way we tore at 134 mph, and I'm convinced that it wasn't extended. With a few suspension modifications and more rugged brakes, the '57 Corvette bodes ill will for the foreign jobs in its road racing class. Who knows? It may start *beating* the Mercedes 300-SL, instead of usually running second to it. When their road racing record is coupled with this new-found performance, it's easy to scotch the rumor that Chevy is about to back out of racing. You'll see factory teams at Nassau, Sebring, and maybe Le Mans.

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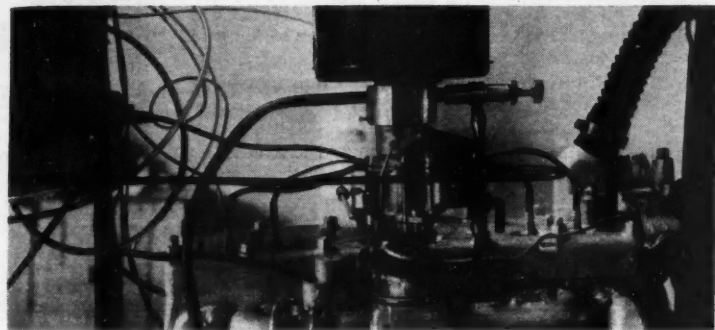
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METROPOLITAN AREAS in general, and Los Angeles in particular, have been made increasingly aware of air pollution—or smog, as it is more popularly known. One of the major sources of pollutants is now believed to be automobile and truck exhaust gases. It seems that the fuel molecules are not completely oxidized during the combustion process in the engine, and these partially burnt or unsaturated hydrocarbons are major offenders in eye-smarting smog conditions.

In an effort to reduce or eliminate these unsaturated hydrocarbons and the attendant noxious fumes, an unusual exhaust system has been developed by Fred A. Standiford and Associates, Redondo Beach, Calif. This device, the Petro-Mizer, is actually a combination of two separate units, one on the intake manifold system, and the other forming the exhaust system.

Recognizing that combustion chamber shape, camshaft configuration, and other facets of engine design are not likely to change significantly nor adequately, an attempt was made to first improve the air/fuel ratios and to reduce the flow of raw gasoline through the engine during deceleration, and secondly to remove the incompletely burned gases from the exhaust while disposing of the harmless combustion products.

The first problem was approached by installation of a carburetor bypass system containing a valve which is operated by intake manifold vacuum. This valve opens under

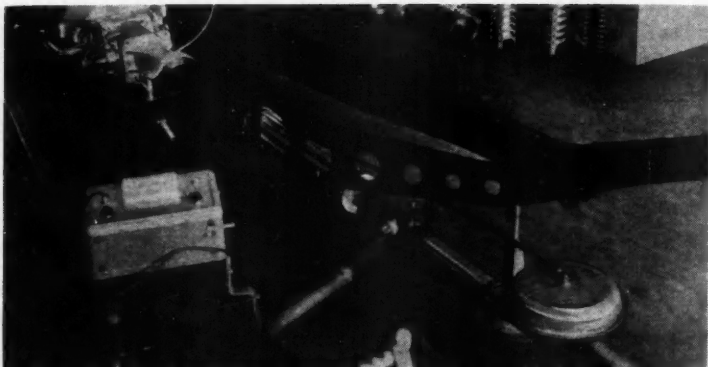
high vacuum conditions to partially equalize the air pressure differences between the inside and outside of the manifold. Theoretically, this should reduce the amount of gasoline drawn into the engine from the idling jets during deceleration and idling, thereby reducing the amount of unsaturated hydrocarbons exhausted to the atmosphere.

Next, the exhaust system was completely redesigned, during which process the muffler was eliminated. In its place you will find a heat exchanger, intended to cool the exhaust gases rapidly, and a centrifugal whirl chamber, intended to separate the water vapor and heavier harmless gases from the lighter, noxious ones which are then supposed to be returned to the engine for re-burning.

Although there have been no complete laboratory tests of the Petro-Mizer as yet (and such tests are necessary for a proper evaluation of the design's efficiency), there are strong indications that combustion efficiency is improved. Tests performed by the inventor show considerably reduced fuel consumption and discernibly smoother performance. Also, the exhaust gases are quite cool, have little odor, and a considerable amount of quite clear, nearly tasteless water flows from the exhaust pipe. However, until a laboratory analysis is made on the Petro-Mizer, it will be impossible to accurately assess its efficiency in removing smog irritants.

—Paul Sorber

Fred A. Standiford and Associates are at 214 Torrance Blvd., Redondo Beach, Calif.



Heat exchanger is visible through holes in frame, centrifugal separator is at lower right.

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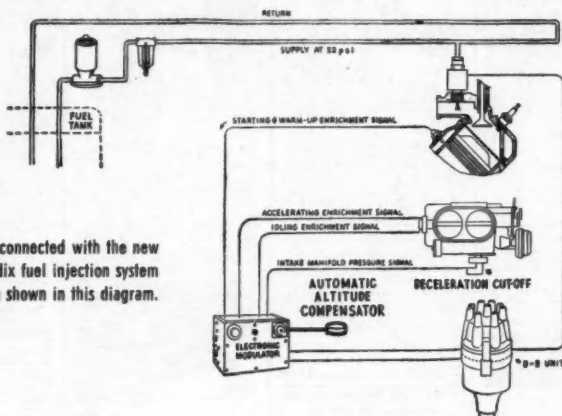
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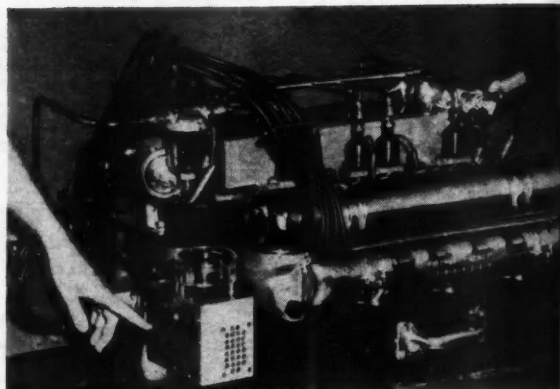
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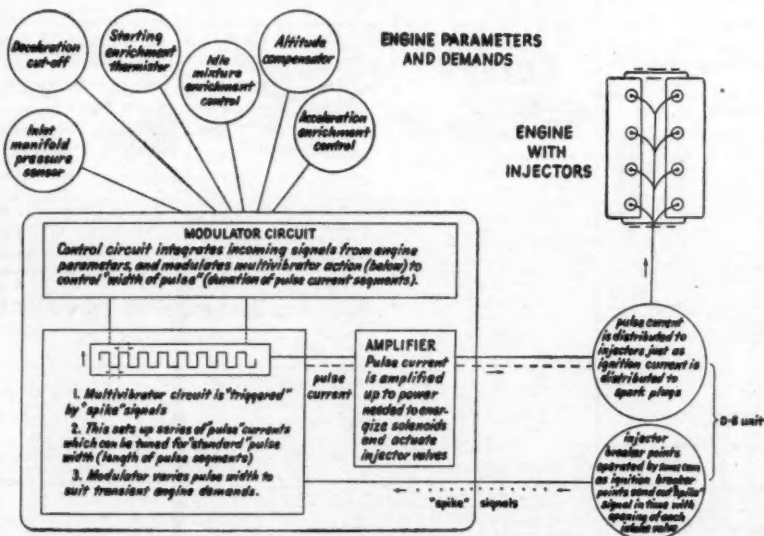


All units connected with the new Bendix fuel injection system are shown in this diagram.

This operating installation on a Buick V8 shows clearly the black spindle-shaped solenoid valves and the connecting fuel lines. Box-shaped intake manifold rests on top of the engine, and the large black wires lead to the modified distributor at left. The hand points to the "brain box," housing the transistorized multivibrator, modulator, and amplifier circuits. Sensing elements are located at various points on the engine to collect the necessary operating data for the brain.



Block diagram illustrating the Bendix injector's operation.



EGGHEAD

for Injection Year

LATEST BID FOR DETROIT FAVOR in the hotly contested fuel injection field (for news of others, see MT, Feb. '56 and page 52 this issue) is the transistorized "Electrojector," made by the Eclipse Machine division of Bendix Aviation Corp.

Bendix is an old hand at dealing successfully with fuel injection problems, having pioneered aircraft application on the wartime B-29 and continuing to dominate the field with systems on the Lockheed Constellation and Douglas DC-7 airliners.

Unlike other systems, this new unit is not timed and driven mechanically off the engine. Tiny transistors housed in a four-by-five-inch box (the electric modulator on diagram) are the "brains" which sense engine requirements and signal for the right amount of fuel for each condition. The transistors are aided by temperature-sensitive equivalents, called thermistors, which regulate the fuel flow to varying engine temperatures.

A transistor multivibrator circuit produces pulses of predetermined width. On being fed to a modulator circuit, these pulse widths are varied according to information gathered by the sensing elements which detect variations in air density, throttle position, intake manifold pressure, and engine speed. Auxiliary circuits take notice of whether the engine is accelerating, decelerating, or idling, and send this information to the modulator.

The modulated pulses are now wider or narrower than standard, and are triggered by an additional set of points in the distributor. The width of each pulse determines the amount of fuel to be injected, but the pulses are not yet very strong. An amplifying stage then boosts the pulse power without changing its width, and the greatly amplified pulse is sent to one of the solenoid-operated injector valves, located at each intake port, which then open to admit the correct amount of fuel at 20 psi to the airstream entering the combustion chamber.

Correct timing of the pulse is assured by the extra set of points in the distributor head. This system is now set up for manifold injection, but is sufficiently flexible to be used, with modifications, for direct combustion chamber injection. The unit provides for enrichment when accelerating, idling, starting, and warming up; cuts off the fuel supply when the car is driving the engine, thus greatly aiding in the elimination of smog, now known to be caused in large measure by unburned fuel contained in the exhaust; and even compensates for altitude where reduced air density greatly affects the efficiency of carbureted engines.

A reasonable 10- to 20-horsepower gain in all speed ranges is claimed, plus quicker starts and warmup and a minimum of moving parts. However, the Electrojector won't be available until Detroit engineers first buy the idea of using it and then adapt it to their particular make of car. This could take a year or more.

—Don MacDonald

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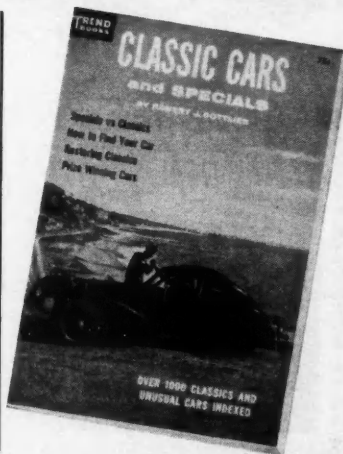
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Motor Sports

by Paul Sorber, Sports Editor

The Darlington "Southern-500" . . .

THE FACT THAT 72,000 PEOPLE used their Labor Day holiday to crowd into the little town of Darlington, located 30 miles from anywhere in the center of South Carolina's tobacco fields, is a tribute to the popularity of late-model stock car racing in the southeastern United States.

Race day dawned underneath water-laden clouds, and soon the field of 72 cars were lined up at the start. Heavy pre-race favorites were Fonty Flock, staging a comeback in a factory Mercury; his brother Tim driving for Pete De Paolo's Ford team; a couple of Kiekhaefer Chrysler 300-Bs driven by Speedy Thompson and Buck Baker; perennial winner Herb Thomas in a beautifully prepared factory Chevrolet; and, of course, Curtis Turner, the man who has started this race seven times and always ended in bad luck, in another factory Ford.

Thompson, on the pole, led the field to an orderly but wet start behind the Plymouth Fury pace car. The lead switched back and forth between Thompson, Turner, and Fonty Flock until the latter cut a tire and came grinding into the pits leaving a shower of sparks.

The pits were evenly divided along both straightaways, making it hard to cover the vital heartbeat of the race. Before the race was a half-hour old, tires of both makes (Goodyear and Firestone) were losing treads; the rubber literally separated from the cords and came off in big chunks, indicating the terrific heat (estimated to be 110° at the surface of the track). This was why the light cars won the race. Kiekhaefer's big 300-Bs could go faster, but ate their way through his tremendous stock of Goodyears, plus extra Firestones bought on the spot, and all this took too much time in the pits.

Laurels for magnificent but futile pit work go to Smoky Yunick, major domo of the Chevrolet factory team. Their star, Herb Thomas, was involved in no less than three front end crashes, but he somehow hobbled around to the pits after each one with less and less car. The last time Smoky sent him out, the car was minus a hood, the front fenders had been cut away with a torch, the new radiator was cocked at a 30-degree angle (the fan was firmly embedded in the old radiator), and even the engine was out of alignment. Thomas happily lapped at over 100 mph in what any insurance man would designate a total wreck, but he had lost over an hour all told in the pits.

At the halfway mark Turner was firmly in the lead and held it through the remainder of the race. He is unbeatable as long as his car holds together, and this time the Ford did. He finished three laps ahead of Pete Thompson to collect a record first-place purse.

Finish Position	Start Position	Car No.	Driver	Car	Purse	Laps Run
1	11	99	Curtis Turner	'56 Ford	\$11,750	364
2	1	57	Speedy Thompson	'56 Chrysler	5000	362
3	2	8	Marvin Panch	'56 Ford	3370	359
4	23	7	Jim Reed	'56 Chevy	1850	358
5	4	3	Paul Goldsmith	'56 Chevy	1300	358



Fonty Flock trails shower of sparks from front right wheel rim.

MT's Best Engineered Car Trophy . . .

SEPTEMBER GOT A BANG OF A START at the National Hot Rod Assn.'s National Championship Drag Races. Held in Kansas City, Mo., over the Labor Day weekend, the big meet was the scene of some astonishing antics. Not the least of these was an officially clocked speed of 159.01 mph, the fastest ever recorded in a quarter-mile, standing-start acceleration. The Miss-Fire-II did it during final eliminations, thereby winning a 400-cubic-inch engine from Chrysler.

Kenny Lindley is justly proud of this beautiful machine, as are the others who had a hand in its construction and preparation: Charlie Potvin, Roger Williams, Frank Hoar, Paul Edmenston, and Bob Alsenz (who doubles as driver). What makes the Miss-Fire-II go? In the hand-crafted tubular frame rests a stock '53 Chrysler V8 block, with stock '55 heads, pistons, rods, crank, valves, rockers, etc. Engine modifications include a Potvin Eliminator Special cam and pushrods, special valve springs, full-floating bearings, and some minor additions like a crankshaft-driven 6-71 GMC supercharger, Hilborn O-type fuel injection, Scintilla-Vertex magneto, and other simple, little things. (See the December issue of *Hot Rod Magazine*, for more details.)

When Lindley and the rest of the gang get around to it, they plan on installing their new engine, completely modified this time, and supercharged of course. For an unfinished car, the old machine ran rather well, don't you think so? When the time came around for the trophy awards, the judging committee selected the Miss-Fire-II as recipient of the Best Engineered Car trophy, donated by MOTOR TREND, and the Fastest Speed trophy. Mel Heath, from Rush Springs, Okla., emerged as the '56 NHRA National Champion when he eliminated Alsenz in the final drag of the meet, with the Heath Chrysler-powered dragster. Congratulations Mel, and watch out for Lindley and his gang!

what's
coming up?

november

21-25, 4th Great American Mountain Rallye, New York City.

december

3-16, Bahamas Speed Weeks, Nassau, Bahamas.
4-16, AMA National Automobile Show, New York City.

february

3-17, Daytona Speedweeks, Daytona, Fla.
20-24, 7th Annual National Autorama, State Armory, Hartford, Conn.



Mel Heath, left, eliminates Bob Alsenz in the Miss-Fire-II, to become the '56 NHRA National Champ.

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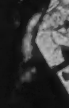
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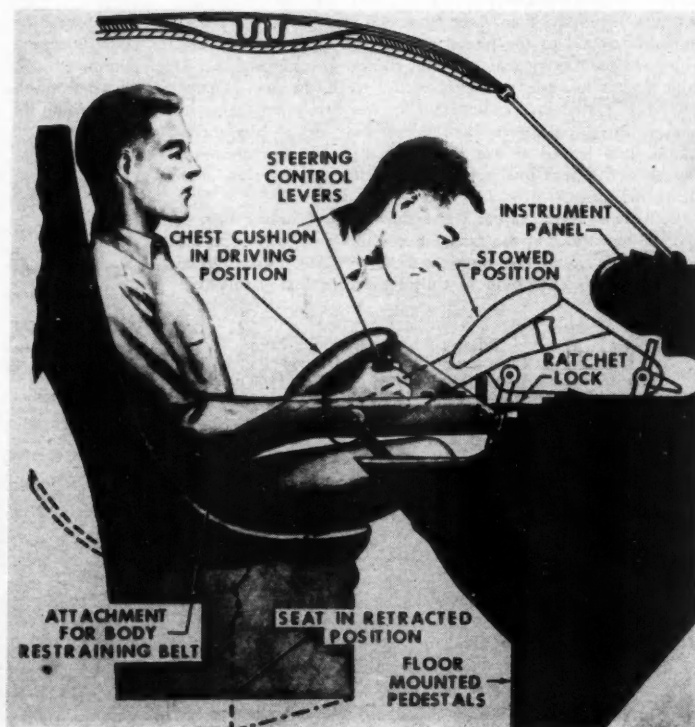
CRASH-SAFE CAR

APPALLED by the terrible toll of high-
way accidents in property damage,
human injury, and death, the Liberty Mutual
Insurance Co. four years ago retained the
Cornell Aeronautical Laboratory, Inc., in the
hope of finding a method for reducing these
grim statistics. From these years of research,
a design has emerged which could be ex-
pected to reduce accident injuries and fatali-
ties by 50 per cent, according to Edward R.
Dye, head of Cornell's Safety Design Research
Dept.

A model of this car is now being con-
structed, to better illustrate how careful au-
tomotive engineering and "packaging" of au-
tomobile passengers would permit them to
walk away from severe crashes, like a 50-
mph head-on collision. This feat is accom-
plished by radical modifications to the design
concept of automobiles as we know them
now. The most revolutionary changes in the

car center around the driver. The steering
wheel has been eliminated, and in its place
there is a two-handled power steering lever
set in a horizontal plane, with a broad
cushion to prevent chest injuries and a
padded web belt to keep the driver's hips in
place on the bucket-type seat. The driver's
seat is located in the middle of the car, in-
stead of the left side, and the front passenger
seats are both positioned somewhat behind
the driver and slightly lower, so as not to
obstruct his view through the gently curving
180-degree windshield. The passengers on
either side are also protected by U-shaped
webbing yokes and chest cushions. All three
of these yoke units pull back from the re-
tracted position on the dash, and lock in
place on the occupant's lap.

Tests have shown that the sharp bends in
wrap-around windshields can be eliminated
by the use of continuously curved glass, im-



proving vision immensely, and that if the driver can be protected and provided with an unobstructed view, many major accidents can be avoided or reduced in severity.

The rear passenger seats are similar bucket-types placed at the rear corners of the interior, between the wheel wells, with the seldom-used sixth-passenger seat between and facing the rear. This last seat is built into the back of the driver's seat and rides on the same rails. Tests show that occupants of this seat quickly become accustomed to this position, and actually prefer the arrangement because of the greater opportunity for socializing with the other passengers.

The door design is unique, and was developed to satisfy a desire for a large opening, positive latching, and a door that would stay closed during a high speed impact. The problem was solved by making the doors in two sections, hinging outward at the middle, with the front edges carried on rollers in a pair of grooves along the body. The latches are similar to those used on safes: three bolts simultaneously engage sockets at the top, bottom, and front of the door. Studies of accidents producing one or more fatalities have shown that in 72 per cent of the cases, one or both front doors opened and one out of three passengers was completely ejected, substantially increasing the fatality and injury incidence. The safety car's doors are not only wider, but they strengthen the body considerably and won't open in a crash.

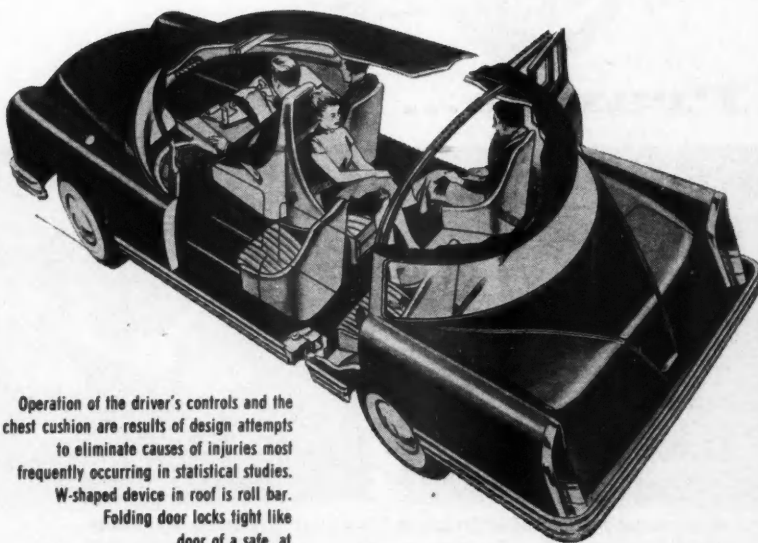
At the front and rear of the door openings there are strong posts which are connected to W-shaped crossmembers in the roof. These crossmembers are strong enough to support

3.5 times the weight of the car, and function as roll bars in the case of overturning. The whole roof of the car is padded to prevent skull fractures, which frequently occur even in relatively minor collisions. To further reduce head injuries, all objects capable of inflicting harm have been either removed, recessed, or padded.

All dashboard instruments have been relocated in a console directly in front of the driver, at a distance which prevents his hitting them in a crash. As a distinct aid to the driver, a band of color runs along the top of the instrument panel, and warns of any malfunction by turning from green to red at a point over any gauge which indicates trouble. The speedometer is mounted just above this tell-tale band, in almost the direct line of sight. This permits the driver to keep his eyes on the road, with only infrequent and very slight shifting of the eyes to glance at the speedometer and color band.

Another seemingly obvious design feature incorporates bumpers with concave faces in the front and rear, and on both sides. The concave faces are intended to catch another car's bumper in an impact, rather than deflect it into the grille or trunk lid. Also, the bumpers are made to "give," and absorb impact shocks instead of transmitting them to the car frame. This idea is so simple and logical, it's a wonder that the current bulbous bumper monstrosities were developed, since they don't do the job they're intended for and are a real factor in pedestrian injuries. In fact, almost all of the ideas embodied here are simple, logical, and desirable. We'll be interested in Detroit's opinion of this car.

—Paul Sorber

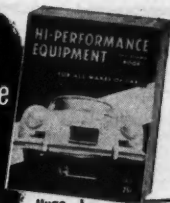


Operation of the driver's controls and the chest cushion are results of design attempts to eliminate causes of injuries most frequently occurring in statistical studies.

W-shaped device in roof is roll bar.

Folding door locks tight like door of a safe, at top, bottom and front.

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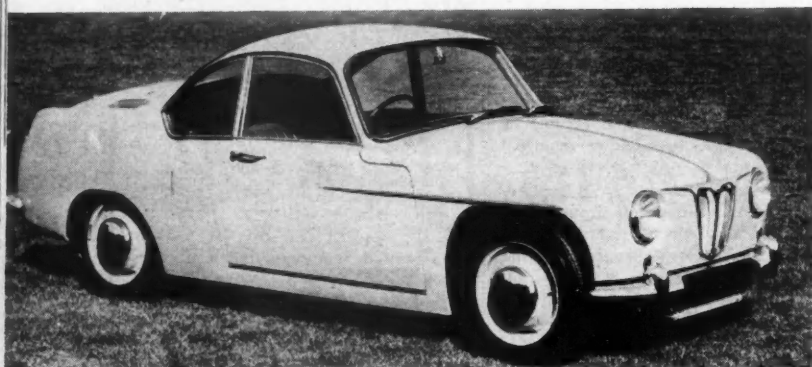
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ROVER unwraps



EARLS COURT is the site of the London Motor Show, where the latest Rover turbine car, the T-3, was given its first public showing. The Rover Co., Ltd., announced the world's first gas-turbine-powered car, the Jet I, in March of 1950, and set official world speed records with it in June of '52. These were 151.196 mph for the flying mile, and 95.668 mph for the standing-start mile. In '55, Rover tested one of its regular sedans in which a gas turbine engine had been installed.

A most important result of this experimentation has been the development of a smaller gas turbine, the 1-S/60, which is less than half as large as the original unit. The 1-S/60 consists of a single stage centrifugal compressor turning a maximum of 52,000 rpm, driven by a single stage axial-flow tur-



new from France...

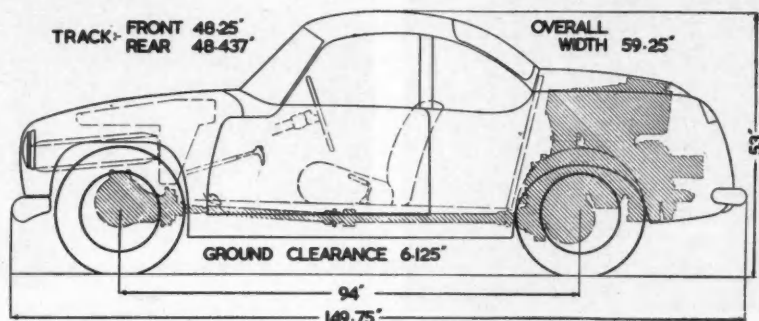


Paris sculptor James Brown has designed and produced this Fiberglas body on a Type 57 Bugatti chassis, for those odd Bugatti owners who want to go modern.



New Citroën ID-19 features larger steering wheel, manual shift, lower cost than DS-19.

s its turbine...



Dimensions on this drawing of the Rover T-3 show how small it really is. Shaded areas are the gas turbine and four-wheel drive.

bine carefully designed to absorb only enough power to drive the compressor, and the fuel and oil pumps. A second single stage turbine removes almost all of the remaining energy from the gas stream and drives the T-3's front and rear differentials through a 7.5 to 1 reduction gear. The reduction gear may be shifted into reverse by operating a control lever in the cockpit, so that you have one forward and one reverse shift position.

The only other controls are the accelerator and brake pedals, the emergency brake lever, and four instrument dials: a jet pipe temperature indicator, compressor shaft tachometer, speedometer, and combined oil pressure, fuel level, and ammeter gauges.

A heat exchanger (reverse-flow secondary plate type) is incorporated to transfer heat from the exhaust gases to the compressed air, just before it reaches the combustion cham-

ber. The exhaust gases, at a temperature of about 392° F, are then ducted to a square opening in the rear deck.

The engine is started with a 12-volt electric motor which drives the compressor shaft through a 10 to 1 step-up gear. As the compressor shaft reaches sustaining speed (15,000 rpm), the engine fires and the starter motor is cut out by a pressure-sensitive electrical switch. Above this point, the engine is controlled solely by the accelerator pedal, which hydraulically varies the setting of a centrifugal governor, which also limits the maximum compressor shaft speed to 52,000 rpm. At this latter speed, the engine produces 110 brake horsepower with a pressure ratio of 3.85 to 1, maximum exhaust gas temperature (before reaching the heat exchanger) of 1526° F, and an air mass flow of two pounds per second (about 1500 cubic

feet per minute). If the engine should fail to light at the proper instant, an air valve automatically opens to drain the excess fuel from the engine.

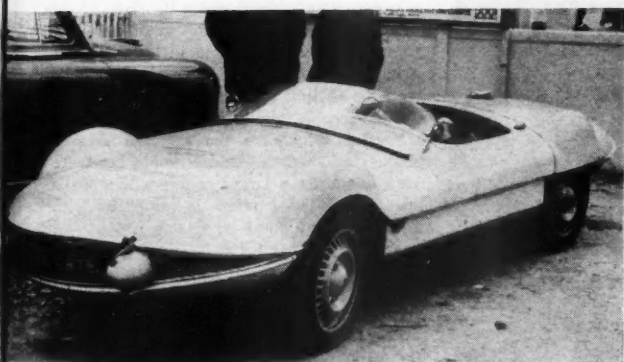
A four-wheel drive arrangement is used on the T-3 because the tremendous torque developed by the engine requires the utmost in traction. Except when power is applied, the front drive free-wheels to prevent drive-shaft windup during cornering, braking, etc.

Rover is quick to state that the pretty Fiberglass-bodied T-3 coupe isn't ready for the public, but it's obvious that public sale of a turbine car isn't too far off. First buyers will probably have to pay a premium price, and they will expect outstanding performance and individuality for their money. As for performance, the T-3 has already been timed at 10.5 seconds from 0 to 60 mph, and 18 seconds from 0 to 80 mph. Top speed is unknown, but lap speeds of 102 mph have been timed, with plenty of power in reserve.

One of the biggest problems with gas turbines is fuel consumption. Here, the T-3 has shown remarkable improvement over its predecessors. Checks at steady speeds showed 11.6 miles per gallon at 40 mph, 11.9 mpg at 60 mph, and 10.7 mpg at 80 mph. This doesn't look too good until you remember that the fuel used isn't gasoline. It *could* be gasoline, or almost any other liquid hydrocarbon. Chances are that a relatively cheap fuel oil or special fuel would be used.

Yes, turbine cars are nearly here. Mercedes-Benz and Ferrari are both reported to be working on turbine race cars; General Motors, Ford, and Boeing are believed to be very far advanced in efforts to put turbines on the highways; but the Rover T-3 is the closest approach to a production car in the world. Rover leads the pack. *continued*

by Gordon Wilkins and Paul Sorber



This pretty little sports car is a remodeled Citroen 2-CV. The Fiberglass body and other parts are sold in kit form.



The new de Brissoneau sports convertible is based on the familiar Renault 4-CV; price in France is about \$2100.

new from England...



tiny sports car...

BERKELEY Ltd., a large British house trailer manufacturing company located at Biggleswade in Bedfordshire, is expanding into the automotive market with a new two-passenger roadster which they call, strangely enough, the Berkeley. Designed by Lawrence Bond (creator of the Bond Minicar), the Berkeley is intended to be a smart, sporty little car, inexpensive to buy and to operate, but with sufficient performance to appeal to those of us who want more than just transportation.

The Berkeley's three-piece unitized structure is Fiberglas-reinforced polyester resin, with aluminum members molded in for extra strength where required. A boat-shaped bellypan is strengthened with aluminum sections to form box-section rails and three crossmembers, making up the basic frame. Another molding forms the front fenders, firewall, and nose, with aluminum panels surrounding the engine compartment. The third molding forms the rear fenders and the tail section. The doors, hood, trunk lid, and detachable hard-top are also plastic.

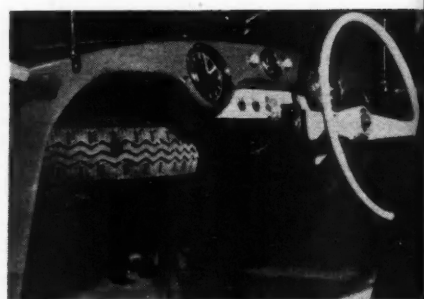
Bolted into the front is a steel subframe supporting the engine, transmission, front

wheel drive, steering, and suspension. The engine is a 20-cubic-inch, air-cooled vertical twin, mounted transversely ahead of the front axles. This minute two-cycle mill produces 15 brake horsepower at 5000 rpm, using a single Amal carburetor and a dual exhaust system. Fuel is gravity fed from a 3.5-gallon tank mounted on the firewall.

The drive is taken by a chain to a three-plate disc clutch which, in turn, drives a three-speed transmission. Another chain drive takes the power from the gearbox to the differential, and thence to the driving axles. These axles, articulated with double Hardy-Spicer universal joints, drive the front wheels.

Independent suspension is featured on all four wheels, with double A-frames in front and swing axles in the rear. Girling coil springs and shocks are used all around, with an additional locating arm on each rear wheel. Girling brakes are used, with light 12-inch wheels bolted to the seven-inch drums. Tires are Michelins, 5.20 x 12.

Our photographs are misleading as to the car's true size. That's no giant lifting the Berkeley's rear wheels off the ground. Actually, the car is so small that it makes everything



else look out of proportion. The tops of the fenders are about 25 inches from the road, and the overall height is just a bit over 41 inches. The wheelbase is 70 inches, tread is 44 inches front and rear, the overall length and width are 125 inches by 50 inches, respectively. And the Berkeley's dry weight is only 616 pounds!

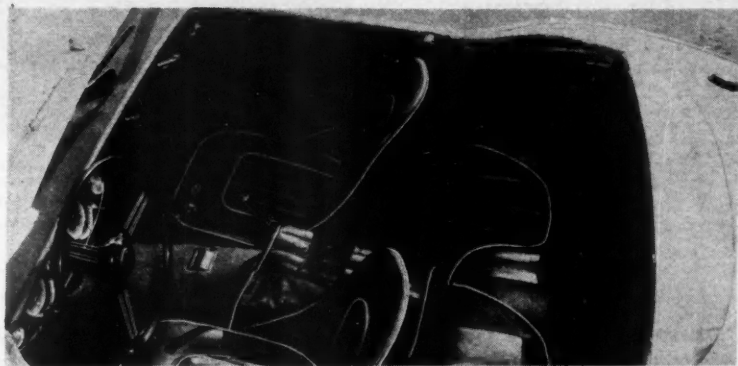
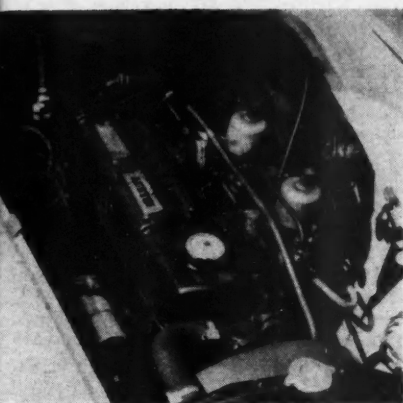
As an example of the fine detailing and forethought in the design, the spare wheel and tire can be removed from the normal stowage position in the trunk, and a rumble-seat (suitable only for small children) fitted in its place, while the spare now fits neatly into the package space under the dash.

The Berkeley went into a 50-unit-per-month production schedule in October, and is expected to sell for \$1045 (in England) with the folding cloth top and side curtains. The detachable plastic hard top is optional at extra cost. With the standard Anzani engine, top speed is about 60 mph, but there are rumors that a larger engine will soon be available. What a bomb it would be with an Ariel square-four!



MG-A hardtop coupe...

BMC introduces, for the first time, a production hardtop coupe with roll-up windows, an unusually large rear window, and all the other features available on the MG-A roadster, including the new 72-horsepower engine.



Austin-Healey four-seater...

CORRESPONDENT Gordon Wilkins was recently offered the pleasant job of driving one of several new Austin-Healeys from Le Havre to the Nurburgring in Germany. There could hardly be a better way of getting acquainted with a car. Here is his account of the new Austin-Healey.

"First impressions: a stiffened and well-tailored tonneau cover with a zipper fastener opens to reveal two well-shaped bucket seats and two smaller seats for children. Weather-proofing is much improved: the big windshield is fixed and channels in the corner pillars mate with rubber flanges on the side curtain window frames to exclude drafts and rain. The simulated leather top now has a larger plastic rear window and the doors have locking external handles.

"The dashboard is padded and the space between the seats is occupied by an armrest, carefully proportioned so as not to interfere with the driver's arm movements. The adjustable steering column was still tight and stiff to operate, but useful in positioning the wheel for comfortable cornering.

"The trunk is not very spacious, considering that much of the room is taken up by the spare and the battery. Next to the battery is a master electrical switch which allows you to shut off all power in case of a short circuit, or to prevent car theft. The fuel tank

filler opening is no longer in the trunk, but mounted on the rear deck.

"Second impressions: The power, crisp response, and smooth flexibility of the B.M.C. six-cylinder engine is astonishing. This is the new C-type engine with a displacement of 2639 cc (161 cubic inches) producing 102 brake horsepower at 4600 rpm, and 142 pounds-feet of torque at 2400 rpm, using an 8.25 to 1 compression ratio. This is a considerable change from last year's 2660 cc (162.2 cubic inches) four-cylinder engine, which developed 90 bhp at 4000 rpm and a maximum torque of 150 pounds-feet at 2000 rpm on a 7.5 to 1 compression ratio.

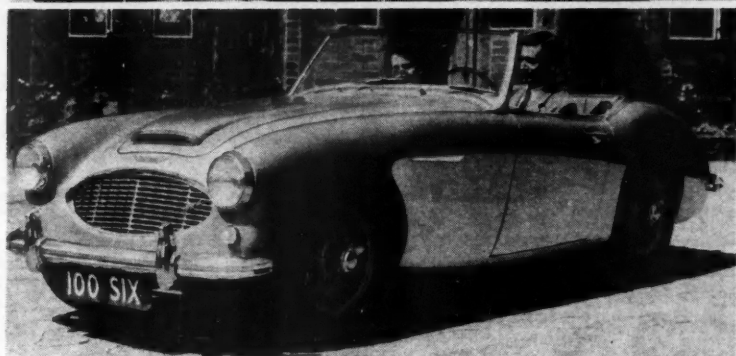
"The four-speed gearbox (second, third and fourth gears are synchromesh) can be

shifted at full throttle as fast as your hand can move, without fear of beating the synchromesh. The smoothness of the engine allows you to slow to a walk in fourth gear, then accelerate to 95 mph or more with nary a miss. You can travel at speeds up to 80 mph for hours (in Germany) without shifting, merely by leaving the gears in third and electrically switching the overdrive in and out.

"At over 90 mph on the autobahn, in blinding rain and a gusty side wind, the car held its course perfectly, feeling almost as if it could be driven 'hands off.' Driving the 66 miles from Ostend to Brussels, the Austin-Healey 100-Six cruised easily in the mid 90s. Driving equally hard over the mountain and forest roads of the Ardennes and Hunsruck, fuel consumption averaged 18 miles per gallon. In more moderate motoring, 24 mpg should be well within reach.

"On the Nurburgring circuit and despite the wet weather, the road holding and steering responded admirably. I found it easy to start a slide and recovery was made with complete assurance. With the top down, the 100-Six was soon lapping at 58 mph in the wet, and showing an indicated 103 mph on the short, undulating straight. With the top up, and on a straight road, the car should do a true 108 to 110 mph.

"After six laps or so, I felt that a greater margin of brake heat dissipation would be desirable for racing, though the brakes were entirely adequate for the hardest road use. Donald Healey has the answer: Girling disc brakes will soon be offered as an option to those of you who wish the utmost in competition performance."



Jaguar-Allard...



Allard's Palm Beach model can be purchased with either the 3.5-liter Jaguar engine with 190 bhp at 5500 rpm, or the 2.5-liter Ford Zodiac mill, with 90 bhp at 4400 rpm. Both are six-cylinder, overhead valve engines.

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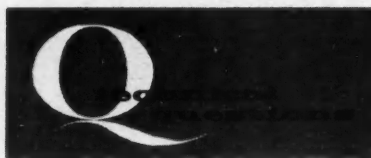
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Q. RADIOS TABOO. Why do they recommend that radio and other electrical equipment be turned off during a gasoline economy run? Fred J. Harden, Hastings, Mich.

A. The more load imposed on a generator, the more torque required to generate. This makes extra work for the engine, which cuts miles per gallon. Contestants always start their run with a fully charged battery to keep the cutout from completing the generator circuit as long as possible. This allows the generator to turn free rather than charge, resulting in increased mileage for that period.

Q. BUYING A VOLKSWAGEN. I want to purchase a Volkswagen. Would you suggest I try to buy one direct from Germany or go through a U.S. dealer? I understand I can save over \$300 by buying direct. James D. Eaton, Cleveland, Ohio.

A. Go through a local Volkswagen dealer, by all means. The only way you will save money is to buy it in Europe if you're going to be there anyway. Even then, service and shipping problems could more than offset the savings.

Q. FORD DIAL INDICATORS. I have a '56 Ford Six with stick shift. I would like to replace the instrument lights with dial indicators. Are any available and what is necessary for installation? Dennis A. Semetana, Clifton, N.J.

A. These instruments are available through automotive parts supply houses. Check MT for their addresses.

Q. SAVING ON MERCEDES-BENZ. I am stationed in Japan and would like to buy a Mercedes-Benz sedan upon my return to the U.S. Could I save money by buying this car here, and if not, how long would I have to wait for delivery there? Major S. K. Slichta, APO 503, San Francisco, Calif.

A. Unless the Armed Forces Act relative to purchases in your area has been revised, you can save quite a bit by buying there. The car you want could probably be delivered within a few days here in the States through any Mercedes-Benz dealer.

Q. BEARING KNOCKS. I own a '55 car which developed bearing knocks after 16,000 miles. Inspection showed loose bearing caps due to a factory oversight. Someone forgot to install lock washers on the bolts. Now I have to put in new inserts. Could I hold the factory responsible? Al Waseleski, Norfolk, Va.

A. We recommend that you contact your dealer regarding this. Ask him to take the problem up with the zone manager. If you have a clear-cut case of factory negligence, it is reasonable to assume some kind of adjustment would be made.

Q. HOPPING-UP CHEVY. I would like to install a '56 Chevrolet engine in my '54 Chevy. Is this possible? Would the car hold up if I supercharged this new engine also? Bob Hackling, Bristol, Conn.

A. Yes—it is possible to install this engine with proper tools and know-how, but it entails a lot of work. You could also supercharge it without having everything else fall apart, but be sure the whole car is in absolute top condition.

Q. REMOVING AIR CLEANER. Will removing the air cleaner from my car burn up the valves? I get better mileage without it. Arthur Boyd, Redondo Beach, Calif.

A. Better gas mileage is possible. Removing the air cleaner without further carburetor changes can cause excessively lean mixture, which is conducive to burned valves. Frankly, however, the abrasive dust that will enter the cylinders without a filter will do much more harm.

Q. CHANGING FORD ENGINES. I want to install a '55 engine in my '53 Ford. Is there a set of instructions to show me how to do this? Nicholas La Cava, Yonkers, N. Y.

A. We have no instructions available. If you have enough patience and equipment it can be done quite satisfactorily. Why not consider a '57 Ford engine? Lots more power!

Q. STALLING MERCURY. My '55 Mercury frequently stalls when I descend a steep grade. I have installed new points and plugs and had the carburetor adjusted. Can you suggest anything? Richard Dadowski, Pittsburgh, Pa.

A. We strongly suspect an improper carburetor float level setting. Also check the gasoline line in the engine compartment. Be sure it isn't touching "hot spots" which can produce vapor lock.

Q. REMOVING TAR. How can I remove tar from my car without ruining the paint? I have tried commercial solvents made for this purpose, but they remove the paint too. T. H. Weiss, New York City.

A. A rag soaked in kerosene should do the trick. However, don't smoke at the same time! We admit you can remove the tar with fire, but that's doing it the hard way!

Q. "OLDSIFIED" AUSTIN-HEALEY. Can a 304-cubic-inch Olds engine be installed in a '54 Austin-Healey? How about weight distribution? Any other engine suggestions? Dale Pelton, Tulsa, Okla.

A. Yes, it can be installed with extensive modification to the front end panel work. Weight distribution would be plenty bad. We suggest a '56 Chevy Corvette engine with a McCulloch supercharger. Weight distribution will be better, and you can expect a 0-60 time of around 5.3 seconds with a Chevy three-speed box. The Healey transmission won't take it. Also investigate the new six-cylinder Austin-Healey 100 engine with four-speed gearbox. It can be supercharged too.

Q. CADILLAC FLOOR SHIFT. I want to install a floor-shift Cadillac transmission in my Ford, but the Cadillac dealer says the three-speed transmission is not available any more. Could you tell me where I could buy one? Ronny De Villa, Mexico, Mo.

A. Most transmission rebuilders in St. Louis or Kansas City should have them. They should cost somewhere between \$35 and \$40.

Q. FISH-TAILING FORD. I own a 1956 Ford which has a tendency to "fish-tail" dur-

ing hard acceleration. I am told sandbags will prevent this. Do you agree? Louis Nagry, Jr., Carteret, N. J.

A. This so-called "fish-tailing" is caused by wheel slippage transferring from one side to the other, a perfectly normal reaction in our conventional differentials. Sandbags will increase the tire loading and probably reduce the tendency for the rear wheels to slip. They will also slow down your acceleration time, and excessive rear-end loading will change the front-end steering geometry.

Q. **MODEL A PLUS V8.** I recently acquired a '29 Ford coupe and I am in the process of restoring it. Could I install a '47 Ford V8 engine, transmission, hydraulic brakes and column shift? Louis Fleckenstein, Johnstown, Pa.

A. Restoring it?? They must have changed the definition of that word. Anything is possible, but few things are practical. You will have to make many other changes to accommodate your conversion. A-V8s were the most popular hot rod conversion for years. With all the later, stronger-built chassis available, it is no longer a practical conversion.

Q. **MODIFICATIONS FOR TACHOMETER.** I would like to purchase a tachometer for my car but don't know whether or not the electric type is practical, or what modification I would have to make to my ignition system. Could you advise me? Bob Smythe, Bakersfield, Calif.

A. No modification is necessary. An adapter fits between the distributor body and cap. Tachometers are entirely practical.

Q. **HOT COIL.** I want to buy a hot coil for my car. The DSM has an advertisement in MT, but I had never heard of this equipment. Is this a new company, and how good is the coil? Roy Müller, Dailey, Colo.

A. The DSM coil has been around a long time and is of excellent quality.

Q. **LEAD OR FIBERGLAS?** I want to remove the trim on my '56 Chevy and change the fender line to a very slight extent. Could I use epoxy resin and Fiberglas to cover the holes, or should I use the time-tried body lead? G. A. Fox, Webster Groves, Mo.

A. There are several very satisfactory glass putty kits on the market that will do the job. Most auto supply houses stock this item.

Q. **AIR-CONDITIONING DUCTS.** I want to install an air conditioner in my '55 Ford and would like to know how I can put the ducts between the header and steel top. The unit will be in the trunk. Jacob Rose, Dallas, Tex.

A. We haven't seen a satisfactory installation of this kind. You would probably be better off to install your cold air outlet behind the back seat with a baffle to disperse the air up and to each side. This has worked very well on several custom installations.

Q. **RUSTING OUT.** Is there any way to prevent a car body from rusting out in areas where salt is used to melt snow and ice on the streets? If there is, I want to use it before winter sets in. Jay Mitchell, St. Paul, Minn.

A. The most effective preventive is a good grade of undercoat. It not only retards rusting out if properly applied, but materially aids in reducing road noise.

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1. The names and addresses of the publisher, editor, and business managers are:

Publisher: R. E. Petersen, 5959 Hollywood Blvd., Los Angeles, Calif.

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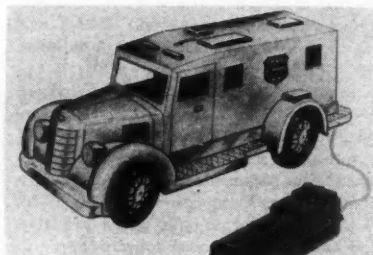
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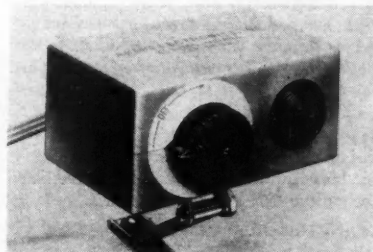


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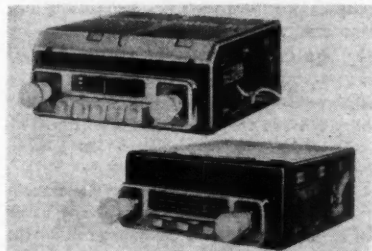
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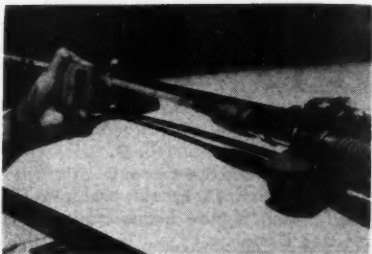
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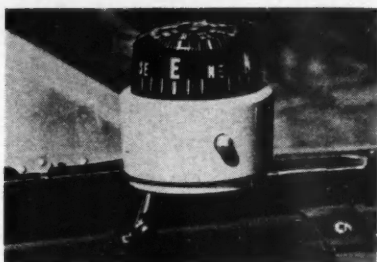


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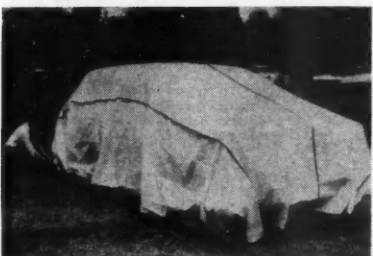




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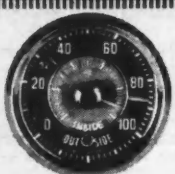
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'15 METZ touring. Beautifully restored body, uph., top. Has starter, generator, battery. Unique friction drive, chain drive, combination coil & semi-elliptical springs make it interesting antique. \$650. George N. McLean, 511 E. Colfax Ave., South Bend, Ind. MORRIS MINOR 4-pass., 2-seater conv. New July, '51, always garaged & used as 2nd car. Low mileage, exc. mech. cond. & appearance. \$575. George N. McLean, 511 E. Colfax Ave., South Bend, Ind. NASH-HEALEY conv. spts. cpe. 15,000 mi., orig.



owner, like new. Yellow, with green top & trim. 1 C. Cosgrove, 1429 Union St., Reading, Pa.

'37 CORD supercharged Model 812 Beverly 4-dr. sed. Completely orig., factory o'hauled trans., exc. running cond. Requires only chrome & paint work. \$2000. R. W. Campbell, Rt. 6, Box 213, Tucson, Ariz.

'48 PLAYBOYS—Complete bodies or body parts: panels, bowls, doors, trunks, hoods, fenders, & folding hardtops. Also some chassis parts. Pix 256. Alexander Mikiska, 774 Old Colony Rd., Meriden, Conn. Phone BEverly 7-4849.

'08 MODEL T. Completely restored, showroom finish. Mahogany body. Everything orig., incl. brass. Send 25¢ & self-addressed envelope for colored photo. Best offer over \$3500. T. E. Reed, Rt. 2, Box 2, Hot Springs, Ark.

'14 MODEL T touring. Completely restored; in perf. shape. New rubber, all brass perf. Best offer around \$1500. Roy Bodem, Hanover, Ind.

'26 MODEL T cpe. Restored to good shape; runs good, tires good. Best offer over \$225. Roy Bodem, Hanover, Ind.

'42 LINCOLN CONTINENTAL cpe. (the rare one). Restored, ready to go. Laverne King, Western Park, Macomb, Ill.

'32 AUBURN Straight 8 in good running cond. Orig. owner; 68,000 mi. Orig. paint & leather uph.; rumbleseat. New top & tires. \$1500. Ivan F. Shand, 4307 W. 12th Ave., Vancouver 8, B.C., Canada.

'41 LINCOLN CONTINENTAL htdp., 90% restored. Completed Chrysler conversion; speed cams, o.d., twin pipes, new uph., chrome, mats, shocks, brakes. Wife doesn't understand! E. L. Kelley, 1008 Potomac Ave., Apt. B-2, Alexandria, Va.

'36 PACKARD Super 8 Series 903 4-dr. sed. Sidemounts, wire wheels, luggage rack, automatic lube system, ride control. Reasonable. Robert C. White, Box 304, Grover, N.C.

'32 AUBURN 8 phaeton. Complete, no rust, mechanically sound, exc. restorable cond. Photos & details on request. Also have Rolls-Royce P-1 chassis parts. D. J. Asher, Box 233, Dunville, Ont., Canada.

'41 LINCOLN CONTINENTAL customized conv.

12,000 mi. on '53 Chrysler V8 engine; stick shift. New Tampico red paint, white top, chromed access., good rubber. \$975. Kirk McNaghy, 301 E. Jefferson St., Columbia City, Ind. Phone 792.

'54 TRIUMPH TR-2. Heater, wire wheels, wing windows, good rubber. 15,000 mi. Best offer over \$1500. H. E. Cosenmeyer, 100 N. Broadway, Shelby, Ohio. Phone 3-1420.

'28 CHEVROLET 4-dr. sed. in exc. running cond. Exceptionally clean, new top & paint. \$350. Roy L. Taylor, Box 1071, Cisco, Tex. Phone Hillcrest 2-1127.

SOUVENIR PROGRAMS of '56 Iowa Motor Sports Show. 24-page illustrated guide to 16-class show—hot rods, customs, antiques, classics, sports cars. \$1 ppd. Jim Harrigan, 4340 Douglas, Des Moines 10, Iowa.

'52 KURTIS-KRAFT conv. with '52 Olds engine, 4-barrel carburetor, Hydra-Matic trans. 4 Firestone



6-ply racing tires. Thunderbird yellow. Best offer around \$2000. David L. Rankin, Rt. 2, Box 324, Kent, Ohio. Phone ORchard 3-9926.

'41 HOLLYWOOD GRAHAM supercharged 4-dr. sed. Body resembles Cord. Rear drive. Exc. cond., in daily use. Fast, rare & beautiful. Priced for quick sale—\$795. G. J. Garand, 75 Berkeley St., Lawrence, Mass.

'56 STUDEBAKER Golden Hawk power kit. Caribbean dual quad carbs, manifold, Iskenderian cam and kit (solid lifters; heavy inner, outer springs; retainers; adjustable pushrods). \$250. Robert Munier, 104 S. Willard Ave., Ft. Branch, Ind. LINCOLN CONTINENTAL fenders: 1 '41 right rear, 1 '47 left front—both brand new. Any res. offer on each. John Allen Taylor, 1350 W. Onondaga St., Syracuse 4, N.Y.

'29-'30 DUESENBERG J Murphy conv. sed. Douglas P. Rucker, M.D., 2913 Park Ave., Richmond 21, Va.

'39 PACKARD Super 8 town sed. Best offer takes Pix 50¢ to interested parties. J. W. Nichols, c/o Bank of Waynesboro, Waynesboro, Ga.

'47 LINCOLN CONTINENTAL conv. Completely o'hauled V-12, o.d. New top, exc. uph., w.w.s. new black hand-rubbed lacquer finish. Finest orig. anywhere. Best offer over \$2000. Mrs. Phyllis B. Dennis, 1915 Bryant St., San Francisco 10, Calif. Phone KLondike 2-0667.

'40 PACKARD Super 8 conv. cpe. Mechanically very good, orig. body fair to good. Sidemounts, r & h, w.w.s. Reasonable. Marshall E. Lamenzo, 19 Jean Rd., Manchester, Conn.

'52 AUBURN cabriolet. Body near exc., engine exc. (15,000 mi.), top good. Rumbleseat, 6 racing wire wheels. Car stored in South Idaho. Best offer around \$425. R. Corbett, 9019 Michigan, Fairchild, Wash.

'34 LINCOLN V-12 KA Series town sedan. Garaged since new, 10,800 mi. Exc. running cond.; needs paint, minor uph. work. Best offer over \$475. W. W. Kelley, 1308 Jolly St., Borger, Tex. CORD L-29 PARTS for engine, drive unit, running gear, & body. Need radiator cap & trunk rack. Frederick Kolbe, 40 Indian Hill Rd., Winnetka, Ill.

'54 KAISER-DARRIN spts. conv. Red, like new, 5000 mi., orig. owner. Used in parades & some pleasure driving by middle-aged man. The Kooiman Agency, Edgerton, Minn.

'35 AUBURN 851. Formerly blown, now has completely rebuilt '37 Cadillac V-12 engine. Exc. body, w.w.s; needs some work. Best offer. Car in Portland, Ore. Lt. James A. Covell, 2119 Marye St., Alexandria, La.

'48 LINCOLN CONTINENTAL htdp. Exc. cond. thruout; stored in heated garage last 4 1/2 yrs. Complete Ford V8 engine ready to install, incl. adapter. Howard W. McDonald, 2205 N. University, Peoria, Ill.

TACHOMETER—Brand new, genuine Stewart-Warner, 0-4000 rpm. Driven at 1/2 engine speed by standard speedo fittings (not included). \$9.95 ppd. R. M. Vincent, 2727 Stevens, Parsons, Kan.

'06 REO 1-cyl., rt-hand drive. Restored, except lights; runs perfectly. Best cash offer. Theron N. Clark, 1612 S. 29th St., La Crosse, Wis. Phone 2-887.

'39 PACKARD 8 New Yorker 4-dr. sed. Orig. gray paint, white headlights, trunk rack, wheels & fender trim. 45,200 mi.; cond. like new. \$1200. Ernest G. Eglay, 22 Birch Rd., Yonkers 5, N.Y.

'30 MODEL A conv. Exceptionally clean thruout; in fine cond. Best offer over \$400. Write Al Bieber, 28 Bulson Rd., Rockville Centre, N. Y.

'48 LINCOLN CONTINENTAL cabriolet with 36,000 mi. Concours winner. In orig. cond., with paint, leather uph., rubbers like new. Converted to '52 Cad engine, \$3000. Walt Woron, 5959 Hollywood Blvd., Hollywood 28, Calif.

'26 STAR 2-dr. sed. (4 cyl.). Mechanically good; engine recently o'hailed. Body & uph. fair, tires good. Complete extra engine, transmission & many spare parts. \$140. Phil Tunison, Rt. 1, Leonidas, Mich.

'30 DE SOTO spt. touring. Believed only one in existence. Drive anywhere. Full details & photo for \$24. Edmund W. Pratt, 20196 Piccadilly Rd., Detroit 21, Mich.

BUGATTI 57 engine, transmission & rear end only. Not complete car. Also owner's manual & some orig. tools. Harold Germain, Cozad, Neb.

'40 PACKARD Super 8 4-dr. conv. Looks & runs good; tires & top like new. \$385. J. N. Robertson, 820 Nash, Ypsilanti, Mich. Phone 4137-M.

'52 BENTLEY 8-liter spt. sed. Replica of 104-mph Autocar Magazine test car. Engine, gearbox, clutch completely rebuilt in England. Concours cond. Pix, data sheet 50¢. Bruce Fagan, P.O. Box 46205, Hollywood 46, Calif.

'39 LINCOLN Model K conv. sed. in perf. cond. Engine recently rebuilt, orig. uph., new top & paint. Best offer. Richard Theriault, 100 Pine St., Tewksbury, Mass.

HOODLATCHES. New, chrome, orig. Model A specs. 2 1/4 in. shank. \$1 ea. ppd. No C.O.D.'s, please! Jim Harrigan, 4340 Douglas, Des Moines 10, Iowa.

PONZER—'53 Kaiser Manhattan with new Pontiac V8 engine, Dual-Range Hydra-Matic, & Traction Masters. Dealer show engine, installed right. Jim Harrigan, 4340 Douglas, Des Moines 10, Iowa. TRIUMPH 1800 5-pass. rdstr., with '53 Ford engine & transmission. Low mileage; rt-hand drive. Roll-up windows, rumbleseat with windshield. Make offer. Jim Harrigan, 4340 Douglas, Des Moines 10, Iowa.

'29 FORD rdstr. Engine in good cond., 56,000 mi., 2nd owner. Complete & authentic; little work needed to restore. James Locher, Farley, Iowa. Phone Trinity 4-3380.

'30 LA SALLE Fleetwood rdstr. in flawless cond. Golf locker & stone shield. Shop manual, many parts & accessories, plus complete parts car included. Best offer. Jay Monroe, 72-22 137th St., Flushing 67, N.Y.

'29 ROLLS-ROYCE Phantom I (American) S-235-RM 5-pass. touring. Exc. cond., new tires, ready to go. W. M. Fryer, 225 N. Green St., Henderson, Ky.

'56 CHRYSLER 300-B. 7000 mi., never raced. perf. cond. Air-conditioned, instant heater & all access. Cost \$6500—will take \$4000. E. J. Swearingen, 907 San Angelo, San Antonio, Tex.

'26 DODGE 4-dr. sed. Near perf. cond., 1 owner, orig. rear rug & tools. Disc wheels, Moto-Meter. \$375. J. W. Napier, 630 Ave. G., Ft. Madison, Iowa.

'27 BUGATTI Type 38 conv. cpe. Partially restored—new paint, good tires, very sound mechanically; only small work left. Must sell for best offer. Larry Knaack, 16 N. Vail Ave., Arlington Heights, Ill. Phone Clearbrook 3-2100.

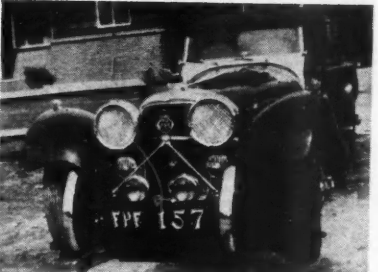
'14 MODEL T touring car in perf. running order. All orig., with Presto headlights. Hil. H. Duellman, Fountain City, Wis.

DISMANTLING CORD 812 sed. for parts. List your wants; no fenders or joints. Return stamp appreciated. Gerald Windau, 627 Foster St., Fostoria, Ohio. Phone 6707.

'32 PACKARD Twin 6 close-coupled sed. Orig. 2-tone gray, much re-chroming, wire wheels, side-mounts. Mechanically A-1. \$1500, incl. '32 duplicate for parts. Deane C. Smith, 605 Quail Ave., Altoona, Pa.

'31 CHEVROLET 2-dr. conv. Twin sidemounts, no rust, easily restored. \$250, incl. complete extra sed. for parts. Ken Hill, West Sand Lake, N.Y.

'37 JAGUAR SS-100 2.5 liter rdstr. Orig. cond.



\$2750 firm. Jim McAllister, 7401 Aurora, Seattle, Wash.

'48 LINCOLN CONTINENTAL cabriolet. Mint, 20,000 mi., rebuilt Mercury engine, dual exhausts. Orig. black with gray interior, clear plastic covers. Air-conditioned; new 8.20 x 15 tubeless ww's. \$1995. Dr. H. G. Pickett, 542 Byrnes Dr., San Antonio 9, Tex. Phone TA 6-3879.

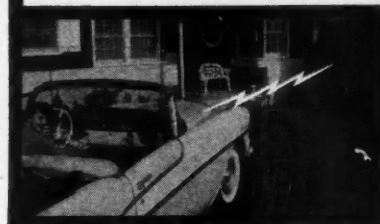
400 AUTO MAGAZINES: Hot Rod, Motor Trend, Road & Track, and many others. Best offer over \$60 ppd. James C. Graham, 59 Brown Ave., Athens, Ohio.

'35 PACKARD 12 Dietrich victoria conv. Complete & orig. Major work done on engine; used daily. \$950. Doug O'Connell, 2243 Sun Mor Ave., Mountain View, Calif. Phone Yorkshire 7-6436.

'48 LINCOLN CONTINENTAL cabriolet. Cadillac

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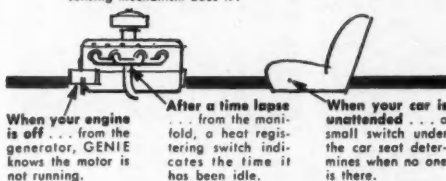
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engine, Hydra-Matic, tonneau windshield, Black. Orig. owner, exc. cond. Used as 3rd car; maintained by Cadillac agency, \$2975 or best offer. J. C. Schuriger, Walters Rd., Novelty, Ohio. Phone EDgewood 8-6711.

'35 PACKARD 120 cpe. Rumbleseat, 2 fender-mounted spares. Black; in good cond. \$300 or best offer. Lawrence H. Volence, 42-43 147th St., Flushing, Long Island, N.Y. Phone FLushing 3-7440.

'39 LINCOLN ZEPHYR V-12 Model 22 limousine. Engine rebuilt, lighter & radio in rear armrest, hot air heater from manifold. \$250. William Barry, 23-43 31st Rd., Long Island City 6, N.Y.

MG AXLES machined from chrome vanadium steel, 10% stronger than orig. Guaranteed fit. Other makes on application. Also other MG parts. David A. Watson, 4965 Columbia Pike, Arlington, Va.

'41 PACKARD 180 limousine, Chauffeur-driven, window behind driver, all-electric rear seat microphone. 6-ply ww's. Exc. general cond. Best offer; photos on request. Roy W. Johnson, Box 629, Bisbee, Ariz.

'36 CHRYSLER Imperial Airflow 4-dr. sed. Restorable, interior good, in daily use. Power brakes, overdrive. Owner's manual, extra cyl. head & parts incl. \$300. Inquiries welcomed. James Williams, 825 Sunglo Dr., San Antonio 21, Tex. Phone WA 2-7714.

'48 LINCOLN CONTINENTAL coupe. McCulloch

supercharged Cad engine, Bendix power brakes. Mint. Investment over \$4300; sell \$2650 cash. Irwin Coffey, Highway 101, Greenfield, Calif. Phone ORange 4-5907.

SPORTS CAR—3/4 completed. Jaguar frame, Mercury engine, wire wheels with knock-off hubs, 5 new tires. Custom body not completed. \$400 or best offer. K. Farrell, 2109 Spring Garden, Philadelphia, Pa. Phone LO 7-1529.

'53 T-BIRD. McCulloch supercharged. Tonneau cover, 2 tops, overdrive, new nylon tires. Low mileage. \$3000. David Dulany, 305 E. 11th St., Washington, Iowa. Phone 37-W.

'46 LINCOLN CONTINENTAL cabriolet with Mercury engine. Winner over V-12s at National Grand Classic Meet; winner at Illinois Reliability Run. \$2900 invested; 1st \$1500 takes. Stan Kordek, Box 324, Mendota, Ill.

'48 PACKARD conv. Orig. owner, \$34,000 mi., immac. cond. Practically new ww's. \$1200. George Strickler, 415 N. 10th St., Boise, Ida.

'04 OLDSMOBILE. Single cylinder, in good running cond. 4 new non-skid tires. John Shupp, Rt. 3, Coldwater, Mich.

ORIGINAL MAGAZINE ADS of all the great classics: Duesenbergs, Cord, Auburn, Cadillac 8, 12, 16, Packard 8 & 12, Marmon 16, Lincoln KB, Stutz Imperial, Jordan, Kissel, Pierce-Arrow, Franklin, etc., 1916-38. Complete listings 25¢. Sheldon

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'37 BUICK Special 4-dr. conv. sed. New black lacquer, top, uph.; engine o'hailed. Owner's manual. Also junked '37 Buick for extra parts. \$800 for both. James Creznic, 3800 Derry St., Harrisburg, Pa.

'37 CORD, 80% restored. Rebuilt engine, transmission, new chrome, instruments, tires. 14 coats blue lacquer, \$2400 invested. Priced for quick sale at \$1500. See at Marshall Motor Co., Inc., Santa Fe Ave., Salina, Kan.

'22 STUDEBAKER 6 touring car. Orig. interior, 5 new tires, mechanically good, body excellent. \$475. Dan Banas, Box 327, Wayland, Mich.

'27 BUICK Standard 4-dr. sed. Completely orig., mint cond., 40,000 mi. Exc. rubber; can be driven anywhere. \$700. William Pew, 729 1st Ave., S.W., Le Mars, Iowa.

'33 ALFA-ROMEO supercharged Gran Sport 1750-cc Castagna 2-seater. Exc. orig. cond.; 45,000 mi.



Red. Traditional handling & performance. \$2400. 2 photos for 50c. N. F. Miller, Jr., 302 W. Davis, Ann Arbor, Mich.

'50 PLYMOUTH "going custom" conv. Dechromed, '34 Buick headlights, electric doors. New 3/4-ace engine loaded with everything new trans., paint, top, interior. R & h, ww's. \$1195. Dick Tjaden, 2030 Valparaiso Ave., Menlo Park, Calif.

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'48 PLAYBOY htdp. conv. Only 80 built. All orig., body exc., good running cond. Good tires, about 32,000 mi. \$500. David L. Rankin, Rt. 2, Box 324, Kent, Ohio. Phone ORchard 3-9926.

'28 MODEL A touring car. Orig., complete & running. No rust, very few small dents. \$325. Also have several kinds of ah-oogah horns at \$6 each. F. Hougham, 1109 N. McLean St., Bloomington, Ill.

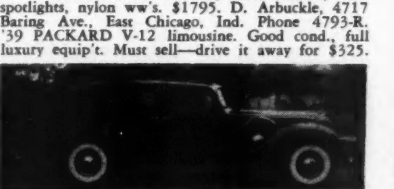
'29 CADILLAC sed. Runs good, tires good, body poor, 5 wire wheels. \$100. Also: 1 32x4 1/2 new Goodyear tire, \$20; some Wells-St. Claire V8 engine parts. F. Hougham, 1109 N. McLean St., Bloomington, Ill.

'48 LINCOLN CONTINENTAL conv. Light blue, with tan top, ww's. All orig.; 44,000 mi. Dual intake included. Richard D. Krevet, 104 Pennsylvania Ave., Hillside, N.J.

'30 OLDSMOBILE cpe. Good cond., completely stock. Best offer accepted. Bob Haser, 910 Hampton St., Scranton 4, Pa.

'47 LINCOLN CONTINENTAL htdp., with orig. V-12 engine. Blue & white body & interior; exc. cond. thruout. Dual airhorns, dual exhaust, dual spotlights, nylon ww's. \$1795. D. Arbuckle, 4717 Barriar Ave., East Chicago, Ind. Phone 4-793-R.

'39 PACKARD V-12 limousine. Good cond., full luxury equip't. Must sell—drive it away for \$325.



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'30 CORD L-29 5-pass. phaeton. Straight 8 engine, orig. cond. thruout. Top lowers. Best offer over \$2000. John S. Conner, P.O. Box 124, Mishawaka, Ind.

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'24 PEEBLES rare V8 sed. Appears to be complete & operable; last registered in '52 \$150 or best offer. Also engine & parts for '25 Ohv Durant. Roger Dorr, 1491 Pine Tree Dr., Walnut Creek, Calif.

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Complete with all parts for easy installation. Specify make, model, year of car, and tire size.

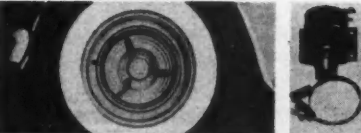
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49-57 Ford . . . \$41.85	49-57 Ford . . . \$ 79.50
49-57 Chev . . . 41.85	49-57 Chev . . . 79.50
53-57 Pont . . . 48.50	53-57 Pont . . . 79.50
54-57 Olds . . . 56.50	52-57 Merc . . . 79.50
54-57 Buick . . . 56.50	53-57 Ply, Dodge . . . 99.75
54-57 Merc . . . 56.50	54-57 Olds . . . 99.75
55-57 Ply . . . 56.50	54-57 Buick . . . 99.75
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Dress up your tires in minutes with the latest in custom whitewalls. 100% pure live rubber! Hugs tire at any speed! No cementing—permanently locked in place by tire bead and wheel rim. Easily installed—do-it-yourself in a few minutes. Fits all 15" or 16" tires—including tubeless and safety rim tires. Transferable—switch to new tires—never wears out. Easy to Clean—just like ordinary whitewalls. Protects tires—prevents damage to sidewalls. Gleaming White. Set of 4—\$8.95. Set of 5—\$12.45. Item #3C.



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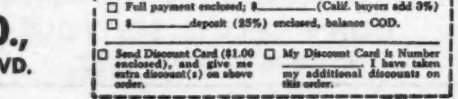
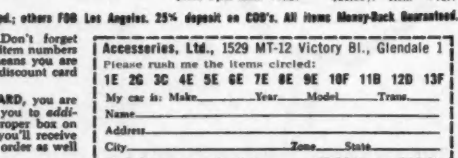
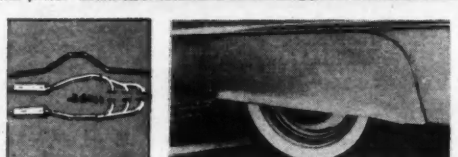
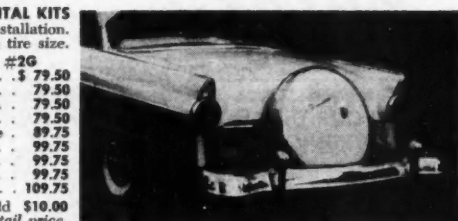
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All of heavy-gauge steel, with concealed rubber liner. A cinch to install. Lever locking. Primed for finish paint. Available for (specify):
35-57 Ford 35-57 Pont. 35-41 Buick
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35-57 Olds 35-54 Chrys 46-49 Kaiser (except 98)
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Crash experts predict we'll all be wearing safety belts soon—and many of us will start living longer. Why wait? Approved Impact Saf-tee belts are available now. Chrome buckle, gray, blue, green, rust, black webbing. Complete kit \$9.95 Ppd. Item #12B.

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☐ Send Discount Card (\$1.00 enclosed), and give me extra discount(s) on above order. ☐ My Discount Card is Number _____ I have taken my additional discounts on this order.

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'41 CADILLAC 4-dr. conv. Orig. mileage 57,000. Factory-new '56 Cadillac engine in August. Absolutely immac. cond. Best offer over \$1600. Photos on request. Daniel M. Lundblad, 10 Lincoln Ave., Havertown, Pa.

'31 CHEVROLET cpe. in immac. cond. Entire car orig., with wooden spoke wheels, unused rumble-seat, 19,000 orig. mi. Radio added later. Best offer. Harry P. Downs, Jr., 93 Chatham St., Chatham, N.J. Phone ME 5-5582.

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'27 NASH custom 4-dr. sed. Mechanically perf., beautiful, prize winner. \$295. Mrs. Charles Dunham, Leitchfield, Ky.

'47 LINCOLN CONTINENTAL coupe. 4 new ww's, new valve & springs. A-1 orig. cond., one owner. Must sell. \$1000. John Federici, 531 Beacon St., Camden 5, N.J.

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'49 KAISER Virginian classic 4-dr. htdp. Beautiful new white finish, black top, near new ww's. Sound mechanical cond., overdrive. \$595 or trade. Dave G. Swanson, 1540 Clark St., Galesburg, Ill.

'32 AUBURN V-12 phaeton. Completely restored, with factory-rebuilt engine. Over \$3000 invested. Will accept V-12 speedster or phaeton as trade-in. Free photos & info. J. J. Connelly, 73 Brown St., Buffalo 11, N.Y.

'32 STUDEBAKER 8 St. Regis brougham (5-pass. cpe.) with 50-inch-wide doors. Very rare model, in good cond.; 2 owners. \$175 or trade. John S. Goff, 519-A E. 132nd St., Hawthorne, Calif.

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DISMANTLING '32 AUBURN 8 100 sed. Will sell all parts or swap for '34 V-12 speedster parts. All letters answered. R. J. Ulmer, 5245 Knollwood Dr.—3, Parma 29, Ohio. Phone ON 1-5798.

'37 CORD 812 conv. sportsman's cpe. New Cord engine, completely restored to orig. cond. \$2250 or swap for Austin-Healey. Stuart Thompson, Lee Haven, Easton, Md.

'27 CADILLAC V8 double-cowl phaeton. Completely restored & reconditioned. \$1200 or trade for sport car. Morris Chapman, Box 13, Granite City, Ill.

SWAP

'30 CHRYSLER 77 rdstr. 4-speed trans., 6 wire wheels, good tires, rumbleseat, folding windshield. In daily use. Will swap for 4-wheel drive jeep. E. W. McGeorge, 50 Alvarado Rd., Mill Valley, Calif.

'26 CHRYSLER 60 2-dr. sed. in good running cond. Want brass 4-cyl. Maxwell, Regal, or Chalmers. Will pay difference. David L. Cliff, 604 Chestnut, Hazel Park, Mich.

WANTED

DESPERATELY NEED 1 '34 Auburn 17-inch solid disc wheel & assorted parts for V-12 speedster. State price & cond. when writing. R. J. Ulmer, 5245 Knollwood Dr.—3, Parma 29, Ohio. Phone ON 1-5798.

IRON PISTONS for Buick 8-60:31-33. Either Allied Wisconsin 228P or Thompson Products C450. Semi-finished. Carleton G. Osgood, 186 Holbrook Rd., North Quincy 71, Mass.

'49 CADILLAC 60 or 62 4-dr. sed. in mint cond., with low mileage. Within 1000 mi. radius of Rochester, N.Y. Photo & price with 1st letter. T/Sgt. G. L. Dunn, Hq. Sq. R.A.D.C., Griffiss A.F.B., Rome, N.Y.

MODEL T rdstr., '25 or earlier, complete, in easily restorable cond. Reasonably priced, within 150 mi. of Ardmore, Okla. Give price & cond. in 1st letter. L. Markley, P.O. Box 1783, Ardmore, Okla.

SET OF TOP BOWS for '32 Ford phaeton. Can probably use set from '31 deluxe phaeton as well. Will also consider selling car. Pay for leads. J. A. Wright, 220 Monroe St., Covington, Va.

WHITE STEAMER touring, Model O or OO (1909) or Model M or MM (1910). Prefer to purchase in unrestored cond. Also want engine, generator, burner & auxiliary parts, less chassis, of Model O or OO or M or MM. W. C. Kinderman, Branscomb (Mendocino County), Calif.

'49 CADILLAC genuine cpe. de ville. Must be all orig. & immac. Incl. color, mileage & photo, if possible, in 1st letter. Del Cyr, 922 Mesquite Ave., Palm Springs, Calif. Phone 9768.

'12-'14 CADILLAC 4-cyl. complete & in running cond. C. D. Lancaster, 4217 Bryn Mawr, Dallas, Tex. MOTOR ANNUALS, motor monthlies, automobile trade journals, years '24 thru '38. Paying top prices for mint copies. State magazine, date & cond. of issues offered for sale. Sheldon J. Lewis, 1373 E. 12th St., Brooklyn 30, N.Y.

'49-'51 FRAZER 4-dr. conv. Send info, pix to William C. Parker, 1929 Weisser Pk., Ft. Wayne, Ind.

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Copycats on a Merry-Go-Round?

"I CAN'T TELL ONE FROM THE OTHER.
They all look alike."

"Well, I wouldn't say that. The '57 Ford looks like the '56 Chevy *should* have looked, but they don't look anything alike."

"But how about the way Chevy copied Buick in front and Cadillac Eldorado in back?"

"Oh, I don't know. It looks more like a Studebaker to me."

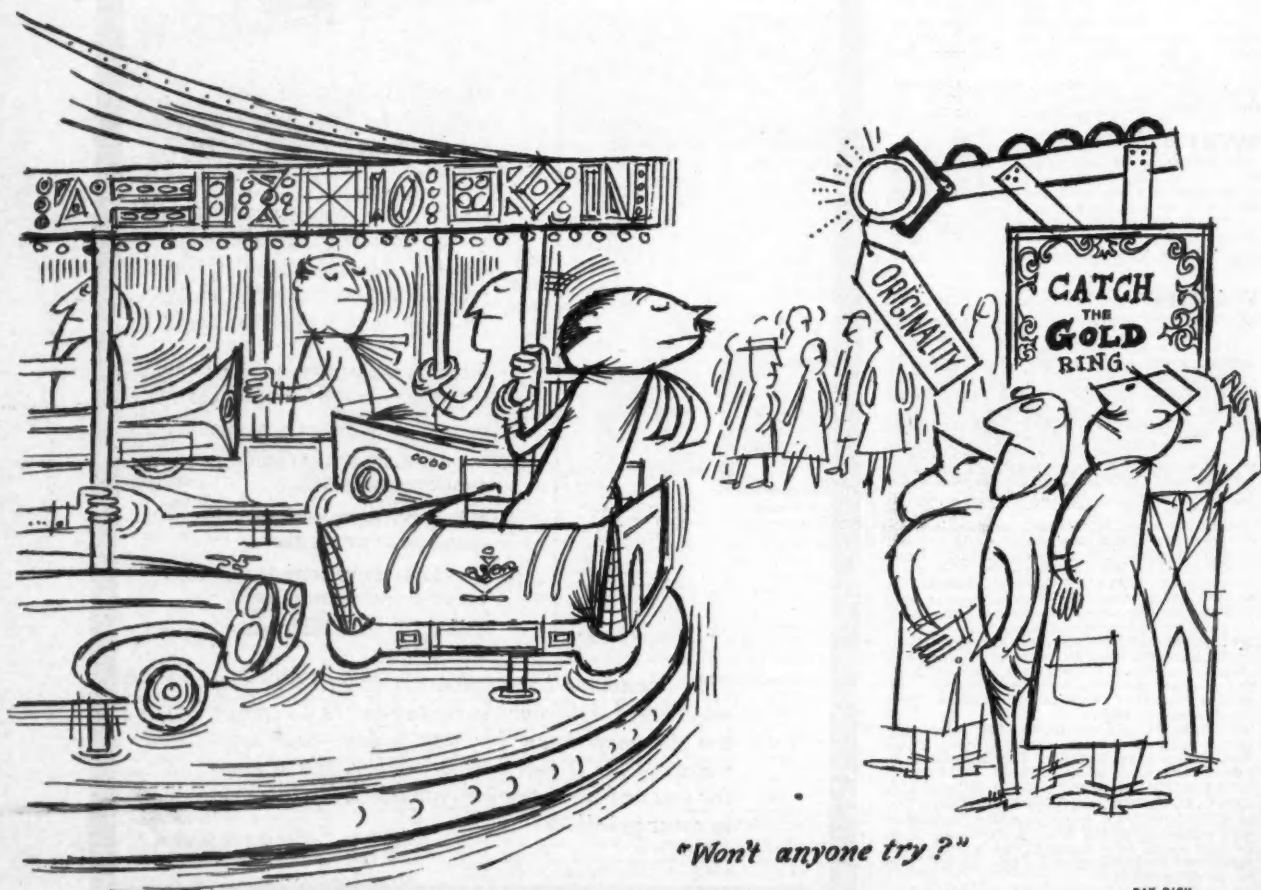
"Speaking of Studebaker, look at the tail lights on the wagon. They look like they came from a Buick."

"Well, Buick got them from Packard, or was it Chrysler?"

"See, that's what I'm getting at. They all look alike!"

Though this is a hypothetical conversation, it's based on too much fact to suit us. One company gets a good (saleswise) styling idea, and either deliberately or by happenstance a modified version of it appears on anywhere from one to a dozen other cars. The fact that job turnover among stylists and engineers is high—as it relates to moving from one company to another—is partly to blame. So many other factors enter into it, however, that no one facet should take the brunt of it.

What really disturbs us is that every manufacturer is aboard this Copycat Merry-Go-Round though some just have a light grip, while others are firmly implanted. Let's hope it stops, so *some of them* can get off.

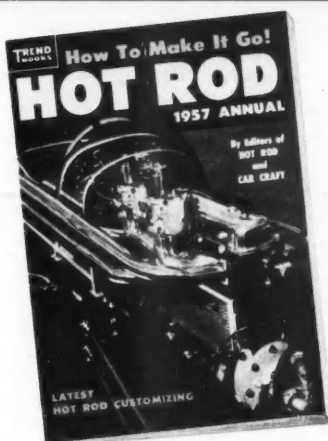


"Won't anyone try?"

RAY RICH

1957

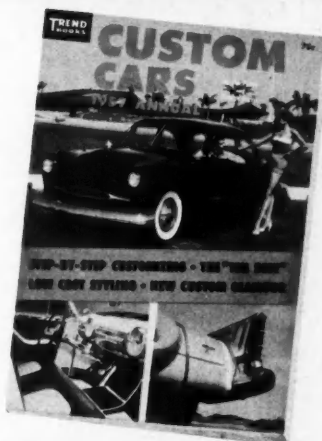
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PAINTING	flame painting and the latest craze—striping
NEWEST IN ENGINE HOT RODDING	the latest innovations on the newest engines



CUSTOM CARS ANNUAL

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Just cutting down fuel pressure is *not* the answer... for that may cause dangerous fuel starvation under fast acceleration and at high speeds. Instead, the answer is to smooth out fuel flow—take out the hammering pulsations that really cause the trouble.

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(Gas surges from fuel pump)



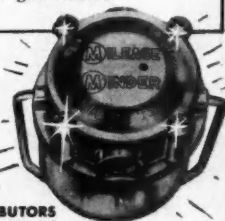
(Smooth flow to carburetor)



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